federal register

Tuesday
November 25, 1980

Part X

Environmental Protection Agency

Hazardous Waste Management System: Clarification of Regulations on Hazardous Waste in Containers; Exemption of Certain Treated-Wood Wastes; Final List of Commercial Products Which Are Hazardous Wastes if Discarded (S261.33); Exclusions in Response to Delisting Petitions

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 262, and 265

[SWH-FRL 1680-3]

Hazardous Waste Management System: General Hazardous Waste Management System; Identification and Listing of Hazardous Waste

AGENCY: Environmental Protection Agency.

ACTION: Final amendment and interim final amendments to rule and request for comments.

SUMMARY: These amendments modify 40 CFR 261.33(c) and add a new section, 40 CFR 261.7, to EPA's May 19, 1980, hazardous waste management regulations. This new section and the change to § 261.33(c) clarify the situations in which residues of hazardous waste that are contained in drums, barrels, tank trucks or other types of containers must be managed as hazardous wastes under 40 CFR Parts 261 through 265 and 122 through 124.

DATES:

Effective dates: The effective date for § 261.7 is November 19, 1980.

The effective date for the amendments to § 261.33, § 265.173 and to § 262.51 is May 25, 1981.

Comment date: Today's amendments, with the exception of § 261.7(b)(3), which is merely a recodification, are being promulgated as interim final rules. EPA will accept comments on them until January 26, 1981.

Compliance dates: See Supplementary Information for details on compliance dates.

ADDRESSES: Comments of these amendments should be sent to Docket Clerk (Docket No. 3001), Office of Solid Waste (WH-565), U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: Alfred W. Lindsey, Office of Solid Waste, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460 (202) 755-9185.

SUPPLEMENTARY INFORMATION:

I. Authority

These amendments are issued under the authority of Sections 1006, 2002(a), and 3001 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6905, 6912(a), and 6921.

II. Compliance Dates

EPA does not consider new § 261.7 to be a "revision" of the Section 3001 regulations within the meaning of Section 3010(b) of RCRA. It is merely a clarification of the May 19, 1980, regulations and does not subject any person to regulatory control who was not already subject to the May regulations. All such persons, of course, should have already notified EPA of their hazardous waste activities on or before August 18, 1980, and if they are hazardous waste treatment, storage or disposal facilities must submit a Part A permit application to EPA on or before November 19, 1980.

Today's amendment to § 261.33(c), which clarifies that EPA considers as hazardous wastes container residues of acutely hazardous materials that are discarded, and does not consider the containers themselves to be hazardous wastes when they are discarded, will require additional persons to notify EPA that they handle these acutely hazardous wastes and will require any treatment, storage or disposal facility which wants to continue to handle such wastes also to submit a Part A permit application and qualify for interim status.

A. Notification

Persons who generate, transport, treat, store or dispose of wastes which are newly subject to regulation under Parts 261 through 265, 122 and 124 because of today's revision to § 261.33(c) are not required to notify EPA so long as they previously notified the Agency that they handle a hazardous waste and received an EPA identification number.[1] Persons who have not previously notified EPA and who now generate or handle the wastes newly included by the amendment to § 261.33(c) must now notify EPA of their activities under Section 3010 no later than January 26, 1981. Notification instructions are set forth in 45 FR 12746 (February 26, 1980).

B. Part A Permit Applications

The owners or operators of all existing hazardous waste management facilities (see the definition of "existing HWM facility" in 40 CFR 122.3, 45 FR 33421 (May 19, 1980) and 45 FR 67756 (October 14, 1980)) which treat, store or dispose of wastes newly included in these regulations by the amendment to § 261.33(c), and who wish to qualify for interim status under Section 3005(e) of RCRA, must file a notification by January 26, 1981, unless they have notified previously (as described in II.A. above), and must file a permit application by May 25, 1981 (see 40 CFR 122.23(a)(1) and (2), 45 FR 33434 (May 19, 1980)).

Owners or operators of facilities who have qualified for interim status and who wish to manage wastes newly included in these regulations by the amendment to § 261.33(c) must submit an amended permit application by May 25, 1981 (see 40 CFR 122.23(c)(1), 45 FR 33434 (May 19, 1980)).

Owners or operators who do not comply with the notification or permit application requirements are precluded from managing these wastes after May 25, 1981 until they have obtained an RCRA permit under Part 122.

C. Compliance With the Requirements of Parts 262 Through 265, 122 and 124

Beginning on May 25, 1981, persons handling wastes newly included by today's amendment to § 261.33(c) must comply with all applicable standards for hazardous waste generators, transporters, and owners and operators of hazardous waste management facilities set forth in 40 CFR Parts 262 through 265, 122 and 124 with respect to these wastes.

III. Background

In May of 1980, EPA promulgated regulations implementing Subtitle C of the Resource Conservation and Recovery Act of 1976, as amended ("RCRA"). These regulations, among other things, identify and list hazardous waste (Part 261), establish standards for generators and transporters of hazardous waste (Parts 262 and 263), and set management and permit requirements for owners and operators of facilities that treat, store or dispose of hazardous waste (Parts 264 and 265 and Parts 122 and 124). 45 FR 33066 (May 19, 1980). These regulations are designed to ensure the proper handling and management of hazardous wastes from their generation through their ultimate disposition.

Hazardous wastes are often stored or transported in containers.[2] Some of these containers may be full, others partially full. Depending on how a particular hazardous waste is to be managed and whether a container is to be re-used, some containers may be emptied, leaving a residue in the container. Other containers may be

[1] EPA's authority for this action is the recent amendment to Section 3010(a) of RCRA contained in the Solid Waste Disposal Act Amendments of 1980 (Pub. L. 96-452, (October 21, 1980)) which leaves the requirements for notification following revision of the Section 3001 regulations to the discretion of the Administrator.

[2] "Container" is defined in 40 CFR 260.10 as "any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled."

cleaned, perhaps creating a rinsate containing hazardous waste.

EPA has received numerous questions about the extent to which partially full, "empty" and cleaned containers, or more precisely, the waste or waste residues in such containers, are regulated under RCRA. Specifically,

(1) What is an "empty container?"

(2) Under what circumstances is a container that has held hazardous waste, but is now "empty," controlled under the RCRA hazardous waste regulations?

(3) How do the small quantity provisions (§ 261.5) and the use, re-use, recycling and reclamation provisions (§ 261.6) apply to container management?

(4) Are container cleaning operations subject to the RCRA facility and permitting requirements?

In response to these questions, EPA is modifying its hazardous waste regulations to better explain the circumstances under which a container which has held hazardous waste (including any of the chemicals listed in § 261.33 (e) and (f), when they are wastes) remains subject to the requirements of Parts 261 through 265, 122 and 124, and the notification requirements of Section 3010 of RCRA. The Agency is doing this by adding a new section of Part 261, § 261.7, which deals exclusively with the issue of when residues in containers will be subject to regulation. This new section will enable persons who deal with container residues to look to one section of the regulations to determine whether they are regulated.

IV. The Control of Residues in Empty Containers and the Definition of Empty Container

In the May 1980 regulations the only specific references to containers of hazardous waste in Part 261, which identifies those wastes subject to regulation, are in §§ 261.33(c) and 261.5(c)(3)–(4). Section 261.33(c) provides that any container or inner liner from a container that has been used to hold any acutely hazardous commercial chemical product or manufacturing chemical intermediate listed in § 261.33(e) is a hazardous waste when it is discarded or intended to be discarded, unless it has been triple rinsed or otherwise appropriately cleaned. Sections 261.5(c)(3) and 261.5(c)(4), part of the special requirements for hazardous waste generated by small quantity generators, excluded from regulation certain small containers and a certain amount of inner liners from containers identified in § 261.33(c). Otherwise, the May 1980 Part 261 regulations are silent on the control of "empty" containers and hazardous waste residues in "empty" containers.

A. Full or Partially Full Containers

Under Part 261, all solid waste that is identified or listed as hazardous waste is subject to regulation under Parts 261 through 265, 122 and 124. Thus, the May 19, 1980, regulations clearly regulate hazardous wastes in full or partially full containers.

B. "Empty" Containers

The typical emptying of a container by pouring, pumping, aspirating or other common emptying methods is not capable of removing all residues. So-called "empty" containers hold small amounts of residue unless they have been thoroughly rinsed or otherwise cleaned to remove such residues. Many persons have concluded that unless hazardous waste residues in "empty" containers are excluded by the small quantity generator exclusion of § 261.5, all such residues are fully controlled as hazardous wastes and thus persons handling such containers would, because of the residues have to ship such containers accompanied by a manifest and have a permit (or interim status) for the treatment, storage or disposal of the residues.

The Agency did not intend, however, to regulate hazardous waste residues in "empty" but unrinsed containers, except where the hazardous waste is an acutely hazardous material listed in § 261.33(e). See the preamble discussion at 45 FR 33116, May 19, 1980. EPA believes that, except where the hazardous waste is an acutely hazardous material listed in § 261.33(e), the small amount of hazardous waste residue that remains in individual empty, unrinsed containers does not pose a substantial hazard to human health or the environment. If there are certain situations where this presumption is unjustifed, the Agency will consider amendments to the regulations to accommodate them. See the discussion below in section IV.E. of this preamble.

In making this presumption, the Agency considered the amounts of hazardous waste residues contained in "empty" containers from which all hazardous wastes have been removed by common methods of emptying containers: Dumping, pouring, pumping and aspirating and, for containers of contained gas, allowing the pressure in the container to reach atmospheric. Although EPA officials have explained in many public meetings that the only residues in "empty" containers that the Agency intended to regulate were those of acutely hazardous materials listed in § 261.33(e), (see 40 CFR 261.33(c), 45 FR 33124, (May 19, 1980)), the Agency did not articulate this in the regulations.

To rectify this omission, the Agency is amending the regulations to expressly specify that the hazardous waste remaining in an "empty" container is not subject to the regulations. See § 261.7(a). On the other hand, the hazardous waste residue in any container that is not considered empty is subject to full regulation as a hazardous waste unless any of the special requirements or exclusions in Part 261 or § 262.34 apply. To implement this clarification EPA is also amending the regulations to provide a definition of "empty container." See § 261.7(b). This definition is in three parts and is keyed to the type of waste in the container, i.e., the methods that must be used to remove the residue from a container for it to be considered empty under § 261.7(b) depend on the material that the container held. What should be clear from § 261.7, however, is that no "empty" containers are subject to regulatory control because no "empty" containers hold residues that are considered hazardous wastes for regulatory purposes.

1. *Containers that have held hazardous wastes other than gases and acutely hazardous materials.* The first part of the definition of "empty container" deals with containers that have held hazardous wastes other than compressed gases and acutely hazardous materials listed in § 261.33(e). For such containers, the definition provides that an empty container is one from which all wastes or other materials have been removed that can be removed using the practices commonly employed to remove materials from that type of container. The definition further provides that no more than 2.5 centimeters (one inch) of residue may remain on the bottom of the container for it to be considered empty. The Agency recognizes that this part of the definition is not perfectly precise and may be subject to interpretation in difficult cases. For example, if the hazardous waste is a two-phase mixture of a liquid and a non-viscous solid or semi-solid and is contained in a drum with a sealed top (with only bung holes provided for filling and emptying the drum), it is very possible that common emptying methods will not remove all of the waste. Common emptying methods might remove the liquid phase and leave the solids or semi-solids adhering to the sides so that there is less than 2.5 centimeters of waste on the bottom of the container. In this example, the Agency would not view the container as an empty container because the total

amount of material in the container would be greater than a 2.5 centimeter layer on the bottom. In spite of its imperfection, the Agency believes this definition is useful and can be made to work with only occasional interpretation for unusual situations. The Agency will render such interpretations when necessary to implement this definition and the related regulatory provisions. Even so, the Agency is open to any advice on how to improve this definition and specifically solicits such advice during the comment period provided for this interim final rule.

2. *Compressed gas containers.* For compressed gas containers, the second part of the definition provides that an empty container is one which has been opened to atmospheric pressure.

3. *Containers that have held acutely hazardous materials.* For containers that have held any of the acutely hazardous materials listed in § 261.33(e), the third part of the definition provides that an empty container is one that has been triple rinsed with an appropriate solvent, or cleaned using another method shown to achieve equivalent removal or, in the case of a container, has had the inner liner removed. This part of the definition of empty container has been shifted from 40 CFR 261.33(c)(1)–(3) in order to combine in one section of the regulations all provisions dealing with the issue of when container residues must be managed as hazardous waste. It was explained in the preamble to the May 19, 1980, regulations. See 45 FR 33115–16.

C. Interim Final Promulgation

Because the first two parts of the definition of empty container (§ 261.7(b)(1)–(2)) are new regulatory provisions, EPA is promulgating them in interim final form and will accept comments on them for 90 days. Section 261.7(a), which clarifies when container residues must be managed as hazardous wastes, also is new and also is being promulgated in interim final form with a 90 day comment period. EPA believes that use of advance notice and comment procedures for these amendments would be impracticable and contrary to the public interest, and therefore finds that good cause exists for adopting these regulations in interim final form (see 5 U.S.C. 553(b)(B)). Section IV.D. below, entitled "Effective Date," discusses the confusion and disruption that would result were EPA not to promulgate these amendments in interim final form with a November 19, 1980, effective date.

The third part of the definition of empty container, § 261.7(b)(3), is merely recodified and is being promulgated as a final regulation.

D. Effective Date

Section 3010(b) of RCRA provides that EPA's hazardous waste regulations and revisions thereto take effect six months after their promulgation. The purpose of this requirement is to allow persons handling hazardous wastes sufficient lead time to prepare to comply with major new regulatory requirements. For the new § 261.7 promulgated today, however, the Agency believes that an effective date six months after promulgation would cause substantial and unnecessary disruption in the implementation of the regulations and would be counterproductive for the regulated community and the public.

The regulatory provisions that these amendments modify take effect on November 19, 1980. Beginning on that date, in the absence of the effectuation of these amendments, all hazardous waste residues down to very minute quantities arguably would have to be managed as hazardous wastes. The clarifications in § 261.7 have been requested by the regulated community and will eliminate the confusion that has existed concerning when container residues must be managed as hazardous wastes. Section 261.7 does not subject any persons or activities to regulation which were not covered by the May 19 regulations. The section only serves to exclude certain residues of hazardous waste from regulatory control. Persons handling excluded residues thus need not comply with any hazardous waste management requirements for those residues. In the absence of this new section, these persons arguably would have to comply with all applicable regulations in Parts 261 through 265, 122 and 124 on November 19, 1980. This lessening of regulatory requirements surely is not the type of revision to regulations that Congress had in mind when it provided a six-month delay between the promulgation and the effective date of revisions to regulations. Consequently the Agency is setting an effective date of November 19, 1980.

E. Options Under Consideration for Regulating Hazardous Waste Residues in "Empty" Containers

As discussed in section IV.B. of this preamble, EPA believes that the small amount of hazardous waste residue that remains in individual empty, unrinsed containers does not pose a substantial hazard to human health or the environment. EPA is concerned, however, that drum reconditioners and other facilities that clean large numbers of "empty" containers may accumulate and treat or dispose of significant amounts of unregulated residues which may pose a substantial hazard to human health or the environment. EPA is currently considering three options to deal with this possible problem.

1. *Triple rinsing for all containers.* The option which EPA considers the most equitable and which appears to offer the greatest protection to human health and the environment is to require that all containers be triple rinsed before they are considered empty. This would ensure that the only residues that would be unregulated under the Part 262 through 265, 122 and 124 regulations would be trace amounts that would remain in a container after triple rinsing or an equivalent cleaning operation. If a container that hadn't been triple rinsed were transported, it would have to be accompanied by a manifest, unless the residue in the container were excluded from regulation by the small quantity generator exclusion (§ 261.5) or by the use, re-use, recycling or reclamation provisions of § 261.6, and could only be shipped to a treatment, storage or disposal facility with a permit or interim status. Under § 261.7(a), as promulgated today, container residues (other than those of acutely hazardous materials listed in § 261.33(e)) of less than an inch are not subject to the RCRA Subtitle C requirements. If all containers had to be triple rinsed before the remaining residue were not regulated, the potential for environmental and health problems that exists under the current version of § 261.7 could be eliminated.

2. *Regulation of the residue when it is removed from the container.* Another option EPA is considering is to add the words "until it is removed from the container" to § 261.7(a)(1) so that the section would read: "Any hazardous waste remaining in a container or an inner liner removed from a container that is empty, as defined in paragraph (b) of this section, is not subject to regulation under Parts 261 through 265, Part 122 or 124 of this chapter or to the notification requirements of Section 3010 of RCRA until it is removed from the container."

Such language would mean that the hazardous waste residue in an empty container could be transported, treated, stored or disposed of without being subject to RCRA regulation while it remained in the container, but that the residue would be regulated if it were removed from the container. This solution would be less burdensome to the regulated community than requiring triple rinsing of all containers that have held hazardous waste, but it would not offer as much protection of human

health and the environment because residues that remained in empty containers would be unregulated. It would require facilities about which EPA is most concerned, i.e., those container cleaning facilities which accumulate large amounts of container residues, to properly manage the residues as hazardous wastes once they were removed from the container. EPA would consider the person who removed the waste to be the generator. Persons who removed only small quantities of residues could qualify for the small quantity generator exclusion, if they also did not have large quantities of other hazardous wastes. One problem with this approach, though, would be how persons removing residues from empty containers that had been shipped to them would receive notice that the residues were hazardous wastes because, until their removal, the residues would be unregulated, and thus could be shipped without a manifest while they remained in their containers.

3. *Limitation on the amount of unregulated residue.* A third option EPA is considering is to regulate only persons who handle large amounts of hazardous waste residue in, or removed from, empty containers. The Agency could accomplish this by limiting the amounts of unregulated residue a person could manage during a particular period of time without becoming subject to hazardous waste management controls. All container residues handled by persons who regularly deal with large amounts of such residues could be regulated.

EPA solicits comments and data on whether the residues left unregulated by § 261.7 may pose a substantial hazard to human health or the environment and, if so, whether commenters favor one of the three options outlined above, or some other alternative to deal with the problem.

V. Clarification of 40 CFR 261.33

Section 261.33(c) lists containers that hold residues of certain acutely hazardous commercial chemical products, manufacturing chemical intermediates, and off-specification products as hazardous wastes if and when they are discarded or intended to be discarded. EPA is making certain clarifying changes to this section.

A. Clarifying Changes Including Regulation of Residues Rather Than Containers

First, as mentioned above, today's amendments move the provisions of § 261.33(c)(1)–(3) to § 261.7(b). Second, EPA also is changing the remaining wording of § 261.33(c) and the title of § 261.33 to clarify that it is the hazardous material residue in a container, rather than the container itself, that is controlled under the regulations if and when the residue is discarded or intended to be discarded. This avoids the problems that can result from a literal reading of the regulations if the container, rather than the residue, is considered a hazardous waste. Read literally, for example, § 262.34(a) would require that a container, if the container itself were considered a hazardous waste, be placed within another container for temporary accumulation.

This change to the wording of § 261.33(c), although merely a clarification of the Agency's intent in the May 19, 1980, regulations, does alter the substance of the requirement in one respect. Although § 261.33(a) implies that any amount of a listed acutely hazardous material is a hazardous waste when it is discarded or intended to be discarded, § 261.33(c) in the May 19 regulations implies that a container or liner that previously held an acutely hazardous material listed in § 261.33(e) becomes a hazardous waste only if and when the container or liner—as opposed to the hazardous waste residue—is "discarded or intended to be discarded." Under one reasonable interpretation of § 261.33(c), a container which is re-used by anyone or sent to a reconditioner for cleaning and subsequent re-use would not be subject to the hazardous waste management regulations because it was not "intended to be discarded." When the residue, rather than the container, is considered the hazardous waste, as it is under the amended § 261.33(c), a container holding a regulated residue, i.e., a container that is not "empty," that is sent to a reconditioner for cleaning and re-use must be accompanied by a manifest and may only be sent to a person with a RCRA permit or interim status for the treatment, storage or disposal of the waste in question. Because this amendment to § 261.33(c) may extend regulatory control to some persons whose activities were not previously regulated under RCRA, EPA is providing time for these persons to notify under Section 3010 of RCRA and to submit permit applications pursuant to 40 CFR Part 122. See the discussion above in section II of this preamble entitled "Compliance Dates."

On the other hand, if the residue of an acutely hazardous waste listed in § 261.33 itself is to be beneficially used, re-used, recycled or reclaimed, it is not being discarded and it never becomes a hazardous waste and thus is not subject to the hazardous waste management regulations. For example, if a container that has held an acutely hazardous material listed in § 261.33(e) is to be re-used to contain the same material listed in § 261.33(e) that it previously held (and the initial residue is not discarded), or to contain some other material where the mixing of the other material with the residue of the § 261.33(e) material constitutes a beneficial use or re-use of that residue, then the acutely hazardous residue in the container or liner is not discarded and thus is not a hazardous waste. EPA has added a "comment" to § 261.33(c) to remind readers of the regulation that unless residues are beneficially used or re-used, or legitimately recycled or reclaimed, or are being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, EPA considers the residue to be intended for discard and thus a hazardous waste.

B. Interim Final Promulgation

EPA believes that use of advance notice and comment procedures for the clarification to § 261.33(c) would be impracticable and contrary to the public interest, and therefore finds that good cause exists for adopting this change in interim final form (see 5 U.S.C. 553(b)(B)). Delay in promulgating this clarification could cause significant harm to the regulated community and the general public. Without this clarification, confusion exists over whether the provisions of § 261.33(a) or § 261.33(c) govern container residues of acutely hazardous materials that are discarded or intended to be discarded. EPA intended that all such residues be controlled as hazardous wastes, but, as discussed above, one reasonable interpretation of § 261.33(c) is that such residues are not considered hazardous wastes if the containers that hold such residues are not discarded. To give notice to the regulated community of how EPA intended § 261.33(c) to work, and to protect the public against the possible mismanagment of the acutely hazardous material residues that may remain in unrinsed containers that are re-used, EPA is promulgating its clarification to § 261.33(c) in interim final form. EPA will accept comments on this change for 90 days and will make any further changes deemed necessary as a result of those comments.

C. Effective Date

Section 3010(b) of RCRA provides that EPA's hazardous waste regulations and revisions thereto take effect six months after their promulgation. The purpose of this requirement is to allow persons handling hazardous wastes sufficient lead time to prepare to comply with major new regulatory requirements. EPA

agrees that the amendment to § 261.33(c) should take effect six months after its promulgation. The amendment will subject some people to the hazardous waste management regulations whose activities were not subject to regulation under the May 19, 1980, regulations. Two classes of people may be brought under regulation for the first time by this amendment. The first class of people are those who for the first time will be considered generators. These are people whose only hazardous wastes are container residues of acutely hazardous materials (that are discarded) from containers that are re-used. Although it was not EPA's intent to allow these residues to go unregulated under the May 19 regulations, EPA agrees that a reasonable reading of § 261.33(c) would so allow. Thus, the change to that section will bring some people under the hazardous waste management regulatory system for the first time as generators and these persons need time to plan to meet the regulatory requirements of Part 262.

The other class of people affected by today's amendment are owners and operators of container cleaning facilities which receive containers which are not considered empty under new § 261.7, i.e., which hold residues of regulated acutely hazardous materials. They will, under the interpretation of § 261.33(c) discussed above, be considered treatment, storage or disposal facilities for the first time under today's amendment. The owners and operators of these facilities will have to prepare to meet the applicable Part 265 standards, if they are eligible for interim status.

The effective date for today's amendment to § 261.33(c) is May 25, 1981. Section II of this preamble, entitled "Compliance Dates" sets forth the dates by which persons who are subject to regulation for the first time by today's amendment to § 261.33(c) or who wish to handle wastes newly regulated by today's clarification must notify EPA and submit a new or revised Part A permit application.

Until the amendment to § 261.33(c) is effective, the provisions of § 261.33(c), as promulgated on May 19, 1980, will remain in effect. Until the amendment to § 261.33(c) is effective, persons handling residues of acutely hazardous materials in containers that are not discarded or intended to be discarded will not be considered subject to Part 262 through 265, 122 and 124 requirements.

VI. Special Small Quantity Provisions

If any container is not considered empty under § 261.7(b), then the hazardous waste remaining in the container is subject to full regulation unless the generator of the waste qualifies for the special requirements for hazardous waste generated by small quantity generators established in § 261.5 or for one of the other special provisions in the regulations.

In response to numerous comments and questions on § 261.5, EPA has amended it in a separate rulemaking. Containers and inner liners are no longer specifically mentioned in the amended § 261.5 because of the change to § 261.33(c) discussed above. Because EPA considers the residue of the acutely hazardous material, rather than the container or inner liner, to be the hazardous waste, § 261.5 no longer specifies a number of containers or an amount of inner liners containing § 261.33(e) residues that a small quantity generator may generate and still come within the special requirements. See § 261.5(c)(3) and § 261.5(c)(4), May 19, 1980.

Under amended § 261.5, a generator with § 261.33(c) container residues is subject to full Subtitle C regulation if the amount of such hazardous waste residue he generates in a calendar month exceeds an exclusion level specified in § 261.5. If the sum of all of his acutely hazardous waste, including his § 261.33(c) residues, is less than 1 kilogram, that waste is excluded from regulation unless he generates more than 1000 kilograms of other hazardous waste in a calendar month, in which case all of his acutely hazardous waste is also subject to regulation that month. If he generates more than one kilogram of acutely hazardous waste in a calendar month, including § 261.33(c) residues, all of that hazardous waste is regulated. Container residues of other than § 261.33(e) materials that are subject to regulation because they measure more than one inch in an individual container (see § 261.7) must be counted toward the 1000 kilogram exclusion in § 261.5. The preamble to the amendments to § 261.5 discusses the application of that section in further detail.

VII. Use, Re-use, Recycling and Reclamation Provisions

There is an important distinction to be drawn between wastes listed in § 261.33 and other listed wastes, with respect to the re-use provisions of the regulations. The use, re-use, recycling, and reclamation provisions of § 261.6 do not apply to any materials listed in § 261.33, including container residues, because § 261.6 only applies to hazardous waste, and materials listed in § 261.33 become hazardous wastes only when they are discarded or are intended to be discarded. Thus, these materials are not hazardous wastes if they are used, re-used, recycled or reclaimed.

On the other hand, hazardous waste container residues, other than those listed in § 261.33, which are regulated because they are in containers that are not empty, i.e., which don't meet the provisions of § 261.7(b) (1) or (2), can qualify for the special requirements in § 261.6 just as any other hazardous waste can.

VIII. Container Cleaning Operations

Some persons have read the definition of treatment in § 260.10 to encompass all container cleaning operations. Commenters were particularly concerned that the triple rinsing or other cleaning operations prescribed in § 261.33(c) (1) and (2) constituted treatment of the hazardous waste which adhered to the container.

A. Triple Rinsing

Triple rinsing, a procedure sanctioned in the regulations, is carried out with the express purpose of removing the waste from the container. The usual intent is simply to remove the waste and not to treat it, and the procedure is not usually "designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize . . ." it. Therefore, most triple rinsing does not meet the definition of treatment in Section 1004 of RCRA and § 260.10, and is, therefore, not subject to the requirements of Parts 264 and 265. The rinsate, however, is a hazardous waste if it meets one of the characteristics or if it contains a listed waste which remains subject to regulations via the mixing rule. See § 261.3(a)(2)(ii). Also, any treatment of the rinsate would almost certainly meet the definition of treatment in RCRA and such secondary treatment operations would be subject to the requirements of Parts 264 and 265.

B. Other Forms of Container Cleaning

Forms of container cleaning other than triple rinsing may constitute treatment because the intent and design of the operations involve not only removal of the waste from the container but also modification of the physical or chemical composition or character of the waste to render it less hazardous or non-hazardous. This is the case where drums are incinerated or "burned out." In this case, the burning operation is designed to remove and destroy the wastes. In other cases, chemicals are added to drums, again, not only to remove the waste, but to react with the wastes and destroy or detoxify them. These processes meet the RCRA definition of "treatment" and are thus

subject to the requirements of Parts 264 and 265.

C. Facilities Which Handle Only "Empty" Containers

Section 261.7 clarifies that container cleaning facilities which handle only "empty" containers are not currently subject to regulation unless they generate a waste that meets one of the characteristics in Subpart D. The mixture rule (§ 261.3(a)(2)(ii)) is inapplicable to any residues excluded from regulation by 261.7(a)(1), which would be the only residues with which a facility that handles only "empty" containers would deal.

D. Facilities Which Handle "Non-Empty" containers

Any facility that handles any "non-empty" containers, i.e., containers which don't meet the definition of "empty" in 261.7(b), is managing regulated hazardous waste.

If the facility is the generator of the hazardous waste, i.e., the container residue, then the small quantity generator exclusion (§ 261.5) and the non-permitted accumulation time provision (§ 262.34) are available to the facility as a generator. Unless one of those provisions is applicable, though, all treatment, storage and disposal of regulated residues must be carried out in accordance with all applicable Part 264 or 265 standards at a facility with a permit or interim status. Note also that any regulated residue of a listed hazardous waste is subject to the mixture rule, so that rinse waters or solvents containing these residues also are considered hazardous wastes, unless they have been delisted in accordance with the procedures in §§ 260.20 and 260.22.

IX. Request for Comments

EPA invites comments on all aspects of the interim final amendments promulgated today and all of the issues discussed in this preamble. The Agency is providing a 90-day comment period and will carefully consider all comments received during that period.

X. Regulatory Impacts

The clarification to § 261.33(c) will bring a small number of additional persons under regulation as generators, transporters, or owners or operators of treatment, storage or disposal facilities. EPA is unable to estimate the number of such persons and thus cannot accurately estimate the increased impacts of the clarification.

The effect of the promulgation of § 261.7 is to reduce the overall costs, economic impact and reporting and recordkeeping impacts of EPA's hazardous waste management regulations. This is achieved by clarifying that container residues of hazardous waste, measuring an inch or less, except residues of certain acutely hazardous materials, are not subject to the regulations. The Agency is unable to estimate these cost and impact reductions.

Dated: November 19, 1980.

Douglas M. Costle,

Administrator.

For the reasons set out in the preamble, Title 40 of the Code of Federal Regulations is amended as follows:

1. Add the following new section to Part 261:

§ 261.7 Residues of hazardous waste in empty containers.

(a)(1) Any hazardous waste remaining in either (i) an empty container or (ii) an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under Parts 261 through 265, or Part 122 or 124 of this chapter or to the notification requirements of Section 3010 of RCRA.

(2) Any hazardous waste in either (i) a container that is not empty or (ii) an inner liner removed from a container that is not empty, as defined in paragraph (b) of this section, is subject to regulation under Parts 261 through 265, and Parts 122 and 124 of this chapter and to the notification requirements of Section 3010 of RCRA.

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified in § 261.33(c) of this chapter, is empty if:

(i) all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, *e.g.*, pouring, pumping, and aspirating, and

(ii) no more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner.

(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(3) A container or an inner liner removed from a container that has held a hazardous waste identified in § 261.33(c) of this chapter is empty if:

(i) the container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(ii) the container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(iii) in the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

2. Revise the title of § 261.33 and paragraph (c) to read as follows:

§ 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded:

* * * * *

(c) Any residue remaining in a container or an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) of this section, unless the container is empty as defined in § 261.7(b)(3) of this chapter. [Comment: Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed; or being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, EPA considers the residue to be intended for discard, and thus a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.]

§ 265.173 [Amended]

3. Delete the first sentence of the "Comment" to § 265.173.

§ 262.51 [Amended]

4. Change the reference for triple rinsing in § 262.51 from "§ 262.33(c)" to "§ 261.7(b)(3)."

[FR Doc. 80-36682 Filed 11-24-80; 8:45 am]

BILLING CODE 6565-30-M

40 CFR Part 261

[SWH-FRL 1680-4]

Hazardous Waste Management System; Identification and Listing of Hazardous Waste

AGENCY: Environmental Protection Agency (EPA).

ACTION: Interim final amendment to rule and request for comments.

SUMMARY: The Environmental Protection Agency is amending the hazardous waste management regulations (40 CFR 261.4) to provide that arsenical-treated wood or wood products which are generated by persons who utilize such treated wood or wood products for the woods' intended end use, and which wood constitutes hazardous waste solely because it fails the test for the characteristic of Extraction Procedure toxicity, is not subject to regulation under 40 CFR Parts 262 through 265 or Parts 122 through 124 or the requirements of Section 3010 of RCRA until the Agency's Office of Pesticide Programs has made further progress in its pending review of arsenical wood preservatives. This amendment is being made as a result of public comments.

DATES: Effective date: November 19, 1980.

Comment date: The Agency will accept comments on this amendment until January 26, 1981. Any person may request a hearing on this interim final rule by filing a request with John P. Lehman, whose address appears below, by December 16, 1980. The request must contain the information prescribed in § 260.20(d) of this chapter.

ADDRESSES: Comments on this amendment should be sent to Docket Clerk, Docket No. "3001/Arsenical-Treated Wood," Office of Solid Waste (WH-565), U.S. Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460.

Requests for hearing should be addressed to John P. Lehman, Director, Hazardous and Industrial Waste Division, Office of Solid Waste (WH-565), U.S. Environmental Protection Agency, Washington, D.C. 20460.

The public docket for this interim final rule is located in Room 2711, U.S. Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460. The public docket is available for viewing from 9:00 a.m. to 4:00 p.m. Monday through Friday, except legal holidays.

FOR FURTHER INFORMATION CONTACT: Matthew A. Straus, Office of Solid Waste, U.S. Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460, (202) 755-9187.

SUPPLEMENTARY INFORMATION:

I. Introduction

On May 19, 1980, as part of its initial regulations implementing Section 3001 of the Resource Conservation and Recovery Act (RCRA), the Agency promulgated rules governing the identification and listing of hazardous wastes. Among other things, these rules identified four characteristics of hazardous wastes which are to be used by all persons generating solid waste to determine if the solid waste is hazardous. (See 40 CFR Part 261, Subpart C.) Pursuant to 40 CFR Part 261, a solid waste is a hazardous waste if it is not excluded by a provision of 40 CFR 261.4(b) and it exhibits one or more of the characteristics of hazardous waste identified in Subpart C of 40 CFR Part 261.

One of the characteristics which EPA has determined makes a solid waste a hazardous waste is described as "Extraction Procedure Toxicity" or "EP Toxicity" and appears at 40 CFR 261.24. In December, 1978, the Agency proposed the EP toxicity characteristic as a criterion for identifying hazardous waste. No comments relating to arsenical-treated wood or wood products were submitted in response to the proposal. In May, 1980, the Agency promulgated the EP toxicity characteristic as a final regulation. In July, 1980, approximately one and one-half years after the initial proposal of the EP toxicity characteristic, the American Wood Preservers Institute (AWPI) first brought to the Agency's attention the possibility that some wood treated with arsenical-based preservatives exhibits the characteristic of EP toxicity and, therefore, might be classified as hazardous waste when disposed of. AWPI requested a delay in the regulations' effective date with respect to arsenical-treated wood.

II. AWPI Comments Relating to Arsenical-Treated Wood

AWPI has requested that the Agency delay action to classify treated wood as a hazardous waste and to "clarify its regulations to indicate that all types of preserved wood, including arsenical treated wood, do not constitute hazardous wastes when disposed." AWPI's request is based on two arguments:

(1) the method of disposing of wood treated with arsenical preservatives is identical to registered uses of the treated wood in place—ground contact; and (2) the Office of Solid Waste should await the outcome of the Agency's Office of Pesticide Programs' pending examination of wood preservatives. The Office of Pesticide Programs is reviewing the risks and benefits associated with the use of arsenical wood preservatives as part of the Federal Insecticide, Fungicide and Rodenticide Rebuttable Presumption Against Registration (RPAR) process. (Arsenical wood preservatives are pesticides under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) because they are applied to control fungi and termites.) The RPAR review will determine whether pesticide registrations of arsenical wood treatments should be modified or canceled.

AWPI commented that application of EPA's hazardous waste regulations to arsenical preservative-treated wood on November 19, 1980, would have unintended consequences. For example, construction companies, utility companies, and other buyers of treated wood could become generators of hazardous waste. AWPI supported its request that the Agency await the completion of the RPAR review by pointing out that the RPAR review would "examine all the environmental effects of the use of treated wood, including ground and marine installation of arsenical-treated wood, such as utility poles and pilings." AWPI contended that the RPAR review would reveal that ground-contact uses of arsenical-treated wood would present no environmental hazard and, consequently, that disposal of arsenical-treated wood by land burial presents no hazard.

III. Amendments to 40 CFR 261.4 With Respect to Arsenical-Treated Wood and Wood Products

The Agency does not believe that implementation of RCRA regulations that affect toxic chemicals that are undergoing review for possible regulation by a program administered by EPA other than the Office of Solid Waste necessarily should await the conclusion of the other program's review. In particular, the Agency believes that substantial differences in the statutory mandates of RCRA and of FIFRA militate against deferring RCRA regulation until the completion of RPAR reviews. RPAR reviews do not include analyses of waste streams and, thus, do not relate directly to concerns about hazardous waste. For example, information relating to the risks associated with the use of creosote- and pentachlorophenol-based wood preservatives would have little direct relevance to the hazards of disposal of wastewater treatment sludges from wood preserving processes that use creosote and/or pentachlorophenol. These wastes are listed in 40 CFR

261.32. In a separate notice, the Agency in fact has announced that it will not wait until the completion of the RPAR review of wood preservatives before proceeding with regulation of these wastes under RCRA. 45 FR 74885, 74888–89 (November 12, 1980). The Agency recognizes, however, that in unusual instances it may be appropriate to defer action under RCRA while RPAR reviews are generating information.

The Agency agrees with AWPI that the RPAR review of wood preservatives could provide meaningful information with respect to the risks presented by disposal of arsenical-treated wood and that it is appropriate for the Agency to defer temporarily the full impact of characterizing arsenical-treated wood as a hazardous waste until the pending RPAR review has progressed further. As AWPI has pointed out, ground-contact uses of arsenical-treated wood present risks similar to the risks associated with land burial of discarded arsenical-treated wood. Therefore, the RPAR review, which will analyze to some extent the risks associated with ground-contact uses of arsenical-treated wood, is likely to produce information directly relevant to the risk associated with disposal of arsenical-treated wood by land burial. In addition, the RPAR review may provide guidance with respect to waste management procedures which might be specifically appropriate to disposal of arsenical-treated wood.

Although the Agency believes it appropriate to await further progress of the RPAR review of wood preservatives before making Subtitle C requirements completely applicable to disposal of arsenical-treated wood, the Agency believes that Subtitle C requirements should apply immediately to arsenical-containing wood wastes such as wastes generated by sawmills or by facilities at which arsenical preservatives are applied to wood. These arsenical-treated wood wastes are likely to be generated and managed in larger, more concentrated quantities than wastes generated by ultimate users of arsenical-treated wood. Moreover, these generators' wastes might be in a form—such as sawdust—which presents risks dissimilar to those which the RPAR review will analyze. In addition, disposal of freshly-treated wood by sawmills or processors is likely to present greater hazards than wood which has been treated years prior to use and disposal. For these reasons, today's action provides a temporary exclusion from Subtitle C only for arsenical-treated wood wastes generated by persons who utilize such treated wood or wood products for the woods' intended end use.

For the reasons set forth above, the Agency has decided to defer, for an estimated three to six-month period, applying RCRA Subtitle C requirements to discarded arsenical-treated wood or wood products following these materials' intended end use. It should be noted, however, that the decision to await further progress of the RPAR review does not signify that discarded arsenical-treated wood and wood products will be excluded permanently from all Subtitle C requirements if the Agency's Office of Pesticide Programs determines that certain ground uses of arsenical wood preservatives do not present unreasonable risks. Such a determination under FIFRA does not necessarily mean that the pesticide is not hazardous; it may mean that the economic benefits of a pesticide are great enough that the risk should be tolerated. This conclusion—if it is reached by the Agency's Office of Pesticide Programs—would not necessarily indicate that the disposal of arsenical-treated wood at the expiration of its useful life should not be subject to safeguards imposed under RCRA.

IV. Interim Final Promulgation

This temporary exclusion from Subtitle C requirements is being promulgated in interim final form. Thus, discarded arsenical-treated wood or wood products following these materials' intended end use is no longer subject to Subtitle C requirements on the basis of the arsenical treatments. This amendment is final for purposes of the 90-day petition deadline under Section 7006 of RCRA. The Agency, however, is soliciting comments on the amendment.

The Agency is making this amendment effective immediately because public comment has been submitted and because delay in promulgating the temporary exclusion could cause significant harm to the regulated community. Since it was public comment which prompted the Agency to promulgate this amendment, the policy underlying solicitation of comments prior to the effectiveness of regulations has been substantially satisfied. The purpose of the temporary exclusion is to defer imposing the full Subtitle C requirements for only a few months to await further development of pertinent information. During this period, the most likely sources of possible hazard—entities such as sawmills—will be subject to Subtitle C. Thus, the Agency believes that there will be sufficient protection of public health. Accordingly, good cause exists for adopting this regulation in interim final form (*see* 5 U.S.C. § 553(b)(B)).

V. Solicitation of Public Comments

The Agency invites further public comments with respect to any aspect to today's action. In particular, the Agency would welcome comments relevant to the following issues:

1. What percentage of these wastes fail the test for the characteristic of EP toxicity? Do any particular types of arsenical-treated wood products fail more that others? What are the results of particular EP toxicity tests for arsencial-treated wood products? (These data should be currently available, in light of generators' obligations under 40 CFR § 262.11 to determine whether their waste is hazardous.)[1]

2. What are the usual disposal practices for these wastes? What percentage of this material is reused, what are the types of reuses, and what percentage of reuses constitute direct land application of the material?

3. How many generators which are not subject to the small generator exclusion (40 CFR 261.5) would become generators of hazardous waste but for the promulgation of today's exclusion? What is the volume of waste that they generate?

4. What modifications, if any, in the waste management standards established in 40 CFR Part 264 and 40 CFR Part 265 should be made if the Agency were to conclude that the disposal of arsenical-treated wood by all generators should be subject to regulation under Subtitle C?

Dated: November 19, 1980.

Douglas M. Costle,

Administrator.

Title 40 CFR Part 261 amended as follows:

1. In § 261.4, Exclusions, add the following paragraph (b)(8):

§ 261.4 [Amended]

(b) * * *

(8) Solid waste which consists of discarded wood or wood products which fails the test for the characteristic of EP toxicity and which is not a hazardous waste for any other reason if the waste is generated by persons who utilize the arsenical-treated wood and

[1] Today's action, of course, does not excuse generators of these wastes from their past obligation to determine if their wastes are hazardous and, in the case of large quantity generators, to have notified the Agency as of August 18, 1980.

wood products for these materials' intended end use.

[FR Doc. 80-36683 Filed 11-24-80; 8:45 am]
BILLING CODE 6560-30-M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

[SWH-FRL 1681-7]

Hazardous Waste Management System: Identification and Listing of Hazardous Waste

AGENCY: U.S. Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency is today finalizing its lists of commercial chemical products, off-specification products, and intermediates that, when disposed of, are considered to be hazardous wastes (40 CFR 261.33). These lists were initially promulgated in interim final form on May 19, 1980 (45 FR 33124–33127). In addition, the Agency is deleting ethylenediamine (Hazardous Waste No. P053), N-nitrosodiphenylamine (Hazardous Waste No. P083), oleyl alcohol condensed with 2 moles of ethylene oxide (Hazardous Waste No. P086), 1,2-propanediol (Hazardous Waste No. P100), and chlorodibromomethane (Hazardous Waste Nos. U040 and U065) from the list of generically-named chemicals in § 261.33 (e) and (f), and making a number of technical changes in the listing descriptions of other listed, generically-named chemicals. Appendix VIII of Part 261 is being amended to reflect these deletions, and to add one compound whose name was omitted.

The Agency also is removing all trade names from the lists of § 261.33 (e) and (f), but clarifying that the scope of § 261.33 (e) and (f) includes in addition to the commercially pure grades of the chemicals, all technical grades, and all formulated products in which the listed chemical is the sole active ingredient. Finally, the Agency is responding to certain questions regarding the interpretation of § 261.33, and indicating that additional questions will be answered in a forthcoming Regulatory Interpretation Memoranda (RIM).

DATES: Effective Date: November 19, 1980. However, persons handling materials covered by this regulation which are formulated products in which a listed chemical is the sole active ingredient, and who have not yet notified the Agency due to a misunderstanding of the scope of the listings must do so by February 23, 1980. Facilities managing such wastes still may qualify for interim status if they submit a Part A permit application by May 25, 1981 (or, in the case of facilities which already have applied to manage other identified or listed hazardous wastes, if they submit an amended Part A application by that date). Interim status standards for all such facilities become effective on May 25, 1981.

ADDRESSES: The public docket for this regulation is located in Room 2711, U.S. Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460, and is available for viewing from 9 a.m. to 4 p.m. Monday through Friday, excluding holidays.

FOR FURTHER INFORMATION CONTACT: For general information, contact David Friedman, Office of Solid Waste, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460, (202) 755–9187.

For information in implementation contact:

Region I—Denis Huebner, Chief, Waste Management Branch, John F. Kennedy Building, Boston, Massachusetts 02203, (617) 223–5777.

Region II—Dr. Ernest Regna, Chief, Solid Waste Branch, 26 Federal Plaza, New York, New York 10007, (212) 264–0504/5.

Region III—Robert L. Allen, Chief, Hazardous Materials Branch, 6th and Walnut Streets, Philadelphia, Pennsylvania 19106, (215) 597–0980.

Region IV—James Scarbrough, Chief, Residuals Management Branch, 345 Courtland Street, N.E., Atlanta, Georgia 30365, (404) 881–3016.

Region V—Karl J. Klepitsch, Jr., Chief, Waste Management Branch, 230 South Dearborn Street, Chicago, Illinois 60604, (312) 886–6148.

Region VI—R. Stan Jorgensen, Chief, Solid Waste Branch, 1201 Elm Street, First International Building, Dallas, Texas 75270, (214) 767–2645.

Region VII—Robert L. Morby, Chief, Hazardous Materials Branch, 324 E. 11th Street, Kansas City, Missouri 64106, (816) 374–3307.

Region VIII—Lawrence P. Gazda, Chief, Waste Management Branch, 1860 Lincoln Street, Denver, Colorado 80203, (303) 837–2221.

Region IX—Arnold R. Den, Chief, Hazardous Materials Branch, 215 Fremont Street, San Francisco, California 94105, (415) 556–4606.

Region X—Kenneth D. Feigner, Chief, Waste Management Branch, 1200 6th Avenue, Seattle, Washington 98101, (206) 442–1260.

SUPPLEMENTARY INFORMATION: On May 19, 1980, as part of its final and interim final regulations implementing Section 3001 of RCRA, the Agency promulgated as § 261.33 of the regulations a list of 361 commercial chemical products or manufacturing chemical intermediates which are hazardous wastes if they are discarded or intended to be discarded. (45 FR 33124–33127.) Section 261.33 also lists as hazardous wastes off-specification variants and the residues and debris from the clean-up of spills of these 361 chemicals, if discarded or intended to be discarded (§ 261.33 (b) and (d)). Finally, § 261.33 lists as hazardous wastes the containers and inner liners of containers that have held 122 of these chemicals (those listed in paragraph (e)), if they are discarded or intended to be discarded, unless they have been triple rinsed with an appropriate solvent or have been decontaminated in an equivalent manner. (§ 261.33(c).) The regulation also covers materials not specifically listed by name, so long as they "have the generic name listed in paragraphs (e) or (f) . . . ." (§ 261.33 (a), (b), (c), and (d).)

The Agency received a large number of comments on this regulation. The comments for the most part challenged the Agency's decision to list particular substances as hazardous wastes. Some questions also were raised regarding the scope of the regulation, particularly with respect to trade products containing a listed chemical but not specifically listed themselves. Comments also were submitted concerning the difficulty of determining the chemical constituents of unlisted trade name products. Finally, many questions have been received regarding the interpretation of § 261.33.

We are setting forth in this preamble our disposition of all listings of particular substances, and a summary of the basis for our decision.[1] We also are clarifying the scope of coverage of trade products, and providing guidance as to how to determine whether a given tradename product is regulated under this section. We also are responding to certain of the interpretative questions raised regarding § 261.33. Additional questions will be answered in a forthcoming Regulatory Interpretation Memoranda (RIM).

[1] We also are indicating the appropriate conforming amendments to Appendix VIII to Part 261.

I. Finalization of Chemical Product Names in § 261.33 (e) and (f)

A. The changes made in response to comments on specific listings are described summarily below. More detailed explanations are contained in the revised Background Document.

EPA hazardous waste No.	Compound name	Action taken	Reason
P019 and U160	2-Butanone peroxide (Methyl ethyl ketone peroxide)	Deleted from § 261.33(e). Remains in § 261.33(f). Added (R) designation.	2-Butanone peroxide and methyl ethyl ketone peroxide, synonyms for the same compound, were mistakenly included in both the § 261.33 (e) and (f) lists. This compound does not meet the criteria for listing as an acutely hazardous waste. However, the compound's oral (rat) LD50 of 484 mg/kg qualifies it for continued inclusion in § 261.33(f). Moreover, the compound is reactive, since it is an oxidizer.
P025	1-(p-Chlorobenzoyl)-5-methoxy-2-methylindole-3-acetic acid.	Moved from § 261.33(e) to § 261.33(f)	After evaluating the data supplied by the commenter which indicated that the correct oral (rat) LD50 value for the subject compound (also known as indomethacin) is 1100 mg/Kg, not the cited 12 mg/Kg, the Agency concluded that waste does not pose an acute hazard. However, since the Agency's Carcinogen Assessment Group has concluded that substantial evidence of carcinogencity exists for indomethacin, the waste will remain listed under § 261.33(f) as U245.
P032	Cyanogen bromide	Moved from § 261.33(e) to § 261.33(f)	The LC50 value cited in the May 19th Background Document was incorrect. According to new data, the compound does not meet the criteria for listing as an acutely toxic waste. However, cyanogen bromide's inhalation (rat) LC50 of 4.35 mg/l/hr—only slightly less toxic than the standard for an acutely hazardous waste—qualifies it for inclusion as a hazardous waste. It thus remains listed under § 261.33(f) as U246.
P035	2,4-Dicholorophenoxyacetic acid [2,4-D]	Moved from § 261.33(e) to § 261.33(f) and listing clarified.	Re-evaluation of this listing in light of data received during the comment period indicates that the compound does not meet the criteria for listing as an acute hazard. Since the toxicity of 2,4-D is well recognized (for example, it is a National Interim Primary Drinking Water Standard pollutant), the compound is listed as a hazardous waste under § 261.33(f) as U240. The active pesticide ($C_6H_3(Cl_2)OCH_2COO$ moiety) is marketed commercially in a number of chemical forms. To clarify that the listing is meant to cover these various forms, the listing description has been clarified by explicitly including 2,4-D's salts and esters.
P052	Ethylcyanide	Deleted	Listing duplicated P101 listing.
P053	Ethylenediamine	Deleted	LDLo value cited in the May 19th Background Document was incorrect. New data indicates that the compound is unlikely to pose a substantial hazard to human health or the environment even if the waste is mismanaged, so the waste therefore has been deleted from § 261.33.
P061	Hexachloropropene	Moved from § 261.33(e) to § 261.33(f)	The LC50 value cited in the May 19th Background Document was incorrect. According to new data, the compound does not meet the criteria for listing as an acutely toxic waste. However, hexachloropropene's inhalation (rat) LC50 of 2.4 mg/l/hr—only slightly less toxic than the standard for an acutely hazardous waste—qualifies it for inclusion as a hazardous waste. It thus remains listed under § 261.33(f) as U243.
P079	Nitrogen peroxide	Deleted	Listing duplicated P078 listing.
P083	N-Nitrosodiphenylamine	Deleted	The LD50 value cited in the May 19th Background Document was incorrect. No information is presently available which shows that the waste poses a significant threat to human health or the environment even if it was mismanaged and it therefore has been deleted from § 261.33.
P086	Oleyl alcohol condensed with 2 moles of ethylene oxide.	Deleted	The LD50 value cited in the May 19th Background Document was incorrect. New data indicates that the compound is unlikely to pose a significant threat to human health or the environment even if the waste is mismanaged. This conclusion is supported by the decision of the Food & Drug Administration to permit the use of this compound as an indirect food additive.
P090	Pentachlorophenol	Moved from § 261.33(e) to § 261.33(f)	After reviewing in more detail the available studies, the Agency has concluded that pentachlorophenol does not meet the criteria for an acutely hazardous waste (see Listing Background Document for Wood Preserving, response to comments, November 1980). However, its toxicity is well recognized and the waste will remain listed under § 261.33(f) as U242.
P100	1,2-Propanediol	Deleted	The LD50 value cited in the May 19th Background Document was incorrect. New data indicates that the compound is unlikely to pose a significant hazard to either human health or the environment even if the waste is improperly managed. This decision is further supported by the Food & Drug Administration's approval of this compound as a direct food additive.

I. *Finalization of Chemical Product Names in § 261.33 (e) and (f)*—Continued

A. The changes made in response to comments on specific listings are described summarily below. More detailed explanations are contained in the revised Background Document.

EPA hazardous waste No.	Compound name	Action taken	Reason
P117	Thiuram	Moved from § 261.33(e) to § 261.33(f) and listing changed to clarify the specific waste being regulated.	According to the NIOSH "Registry of Toxic Effects of Chemical Substances", thiuram is a synonym for bis(dimethylthiocarbamoyl) disulfide. Comments were received which indicated that other compounds were also known as "thiurams". We have accordingly changed the listing "thiuram" to clarify that the intended compound is "bis(dimethylthiocarbamoyl) disulfide". Secondly, the LDLo data cited in the May 19th Background Document was incorrect. According to the new data, the waste does not meet the standard for an acutely hazardous waste. However, bis(dimethylthiocarbamoyl) disulfide's synergistic action with alcohol could pose a substantial hazard to human health if the waste was mismanaged and, as a result, contaminated drinking water. Thus the compound has been listed in § 261.33(f) as U244.
U040 and U085	Chlorodibromomethane and Dibromochloromethane	Deleted	After reevaluating the available environmental and toxicological information, the Agency has concluded that the information is not conclusive enough to justify retaining the listing. Pending receipt of additional data, the waste has been removed from inclusion under § 261.33.
U044	Chloroform	Deleted (I) designation	Mistakenly included. Chloroform does not have a flash point below 60°C.
U100	Dimethylnitrosamine	Deleted	Acutely toxic and remains listed as P082.
U104	2,4-Dinitrophenol	do	Acutely toxic and remains listed as P048.
U154	Methanol	Changed to (I) designation	After considering the comments received, the Agency has concluded that it has insufficient information to justify listing methanol for toxicity. However, since it has a flash point of 11°C, it will remain listed under § 261.33(f) as an ignitable waste.
U161	Methyl isobutyl ketone	Changed to (I) designation	After considering the comments received, the Agency has concluded that it has insufficient information to justify listing methyl isobutyl ketone for toxicity. However, since it has a flash point of 22.8°C, it will remain listed under § 261.33(f).
U197	Quinones	Changed to p-benzoquinone	As the May 19th Background Document indicated, the Agency's available toxicological data referred to p-benzoquinone only. The original listing of "Quinones" thus was over-inclusive. We are accordingly revising the listing description. Appendix A to the May 19th listing Background Document summarizes adverse health and environmental effects associated with p-benzoquinone.
U202	Saccharin	Added to listing ". . . and salts."	The May 19th Background Document was intended to include both the parent and its salts, since normal commercial use includes (and is known to include) both forms. In light of this common usage, we do not believe that any notice and comment issues are present. The arguments that saccharin is not carcinogenic were not deemed persuasive enough by the Agency to warrant deletion from § 261.33 list. That saccharin poses a significant carcinogenic hazard is amply demonstrated by the warnings that are required by the Food & Drug Administration to appear on any food to which saccharin is added.
U229	Trichlorofluoromethane	Deleted	Listing duplicated U121 listing.
U238	Urethane	Listing description modified	The original listing of urethane has been changed to read "ethyl carbamate (urethan)" to indicate more clearly that the listing does not refer to either the polymers commonly known as "polyurethanes" or their precursors.
U239	Xylene	Changed to (I) designation	Xylene was mistakingly listed as toxic instead of as ignitable. While xylene does not appear to pose a sufficient toxicity hazard for listing as a toxic waste, as the May 19th Background Document indicated, xylene is an ignitable waste due to its flash point of 27°C.

B. In addition to the above changes made in response to comments, the following changes, described summarily below, have been made as a result of the Agency's review of the interim final regulations.

EPA hazardous waste No.	Compound name	Action taken	Reason
P006	Aluminum phosphide	Added (T) designation	In addition to its reactivity toward water (indicated in the May 19th Background Document), the waste is also acutely toxic because of its toxicity. The (T) designation had been omitted inadvertently.
P030	Cyanide salt mixtures not otherwise specified	Modified listing description	Clarify the meaning of the term "cyanides" in light of a comment which indicated that the listing might be misunderstood.
P055	Ferric cyanide	Deleted	Listing duplicated P030 listing.

I. *Finalization of Chemical Product Names in § 261.33 (e) and (f)*—Continued

EPA hazardous waste No.	Compound name	Action taken	Reason
P065	Mercury fulminate	Added (R) designation	The (R) designation was omitted inadvertently While mercury fulminate is toxic (as the May 19th Background Document points out), it is also acutely hazardous because of mercury fulminate's explosive properties.
P080	Nitrogen tetroxide	Deleted	Listing duplicated P078 listing
P091	Phenyl dichloroarsine	Deleted	Listing duplicated P036 listing
P097	Phosphorothioic acid, O,O-dimethyl ester, O-ester with N,N-dimethyl benezene sulfonamide.	Listing corrected	The Agency had mistakenly listed this compound. It does not exist. The correct compound is "Phosphorothioic acid, O,O-dimethyl O-[p-((dimethylamino)-sulfonyl)phenyl] ester."
P112	Tetranitromethane	Changed to (R) designation	The (R) designation was inadvertently omitted While tetranitromethane is toxic (as the May 19th Background Document points out), it is acutely hazardous because of tetranitromethane's explosive properties.
U001	Acetaldehyde	Changed to (I) designation	This compound does not pose a sufficient hazard for listing because of toxicity. However, acetaldehyde's flash point of −37.8°C classes it as a hazardous waste by reason of ignitability.
U006	Acetyl chloride	Added (R) designation	The reactivity designation was mistakenly omitted from the listing, although the May 19th Background Document cited reactivity as a reason for listing.
U012	Aniline	Added (T) designation	In addition to aniline's ignitable properties, it is also toxic with an oral (rat) LD50 of 440 mg/kg (Merck Index).
U019	Benzene	Added (I) designation	As well as being toxic, this compound is highly flammable (10–12°C). (Merck Index.)
U033	Carbonyl fluoride	Added (R) designation	In addition to carbonyl fluoride's toxic properties, as the May 19th Background Document indicates, it also poses a hazard due to its reactivity.
U054	Cresylic acid	Deleted	Listing duplicated U052 listing, which now reads cresol and cresylic acid.
U055	Cumene	Changed to (I) designation	This compound does not pose a sufficient hazard for listing because of toxicity. However, cumene poses an ignitability hazard due to its flash point of 44°C.
U074	1,4-Dichloro-2-butene	Added (I) designation	A review of the literature indicated that as well as being toxic, this compound is highly flammable (flash point of 27°C).
U085	1,2:3,4-Diepoxybutane	Listing corrected	Clarification, prefix omitted by mistake
U117	Ethyl ether	Changed to (I) designation	This compound does not pose a sufficient hazard for listing because of toxicity. However, ethyl ethers flash point of −45°C classified it as an ignitable waste.
U140	Isobutyl alcohol	Added (I) designation	This ignitability designation was mistakenly omitted As the F005 Listing indicated, the waste posses a flash point of 28°C. (See discussion in section I. C. of this preamble.)
U152	Methacrylonitrile	Added (I) designation	As well as being toxic, this compound is highly flammable (12°C).
U153	Methanethiol	Added (I)	As well as being toxic, this compound is highly flammable (−18°C).
U156	Methyl chlorocarbonate	Added (I) designation	This designation was mistakenly omitted although the May 19th Background Document indicated that the waste presents a hazard due to ignitability. The waste in fact has a flash point of 12°C.
U162	Methyl methacrylate	Added (I) designation	This designation was mistakenly omitted from the regulation, although the May 19th Background Document indicates that the compound is ignitable. The waste, in fact, possesses a flash point of 10°C.
U175	N-Nitrosodi-n-propylamine	Deleted	Listing duplicated U111 listing
U194	n-Propylamine	Added (T) designation	The toxic designation was omitted mistakenly. Further discussion is contained in section I. C. of this preamble.
U223	Toluene diisocyanate	Added (R) designation	As well as being toxic, this compound is highly reactive. See discussion in 2. C. of this preamble.
U244	Toxaphene	Moved from § 261.33(f) to § 261.33(e)	Material has an oral (rat) LD50 of 40 mg/Kg, thus meeting the standards for an acutely hazardous waste. Its new hazardous waste number is P123

C. Several comments were received which argued against the listing of a specific compound but were judged by the Agency to be nonpersuasive. These comments are summarized below along with the reason for our decision to retain the chemical in the § 261.33 lists.

EPA hazardous waste No.	Compound name	Reason
PO 56	Fluorine	This chemical was listed as intended. The hazardous material is flourine, the diatomic molecule F_2, not the polynuclear aromatic "fluorene" discussed in the comment. Since flourine has a reported inhalation (human) TCLo of .00035 mg/l/hr, which falls within the standards for an acutely hazardous waste, it will remain listed under § 261.33(e).
P107	Strontium sulfide	While the oral (rat) LD50 data cited in the May 19th Background Document was incorrect, the correct oral (human) TCLo data which was cited by the commenter—50 mg/Kg (Letter from Chemcial Products Corp., dated August 18, 1980)—confirms the agency's original classification of this waste as acutely hazardous

EPA hazardous waste No.	Compound name	Reason
U007	Acrylamide	The Agency admits that the Health and Environmental Effects profile for acrylamide was unavailable for comment when the regulations were promulgated. However, the Agency strongly believes that sufficient information on the toxicity/carcinogenicity of this compound was presented in the listing Background Document for waste K014 to support the continued inclusion of acrylamide under § 261.33.
U030	4-Bromophenyl phenyl ether	The commenter claims that this compound is not in commerical use. Pending verification of the claim the compound will remain listed under § 261.33.
U037	Chlorobenzene	As was discussed in the Health and Environmental Effects Profile cited in the May 19th Background Document, chlorobenzene is absorbed from the gastrointestinal tract and is in part metabolized to chlorinated phenols. Although its acute toxicity is not very high, many chronic effects have been noted. Continued administration at low doses inhibits red blood cell formation, induces eosinophilia, and chromosome changes in the rat. Decreased spermatogenesis and other gonadal effects were also noted in male dogs and in female rats exposed to low doses. Chlorobenzene has also been found to be mutagenic in certain short term bioassays.
U075	Dichlorodifluoromethane	Commenter did not present any data to argue against the continued listing of dichlorodifluoromethane and the waste thus will remain listed. It should be noted that the Agency's overriding concern with this compound, as with all chlorinated fluorocarbons, relates to the fact that chlorinated fluorocarbons may indirectly cause skin cancer by depletion of the stratopheric ozone. For further information, the reader is referred to the Listing Background Document "Spent Halogenated and Non-Halogenated Solvents and Still Bottoms/Sludges From The Recovery Of Those Solvents."
U080	Dichloromethane	The Agency disagrees with the comment that dichloromethane does not pose a hazard if mismanged. Although the NCI sponsored bioassy studies have not been completed, EPA has found suggestive evidence of its carcinogencity. Therefore, while the Agency is revising the Background Document to indicate that dichloromethane is only a suspect carcinogen, it cannot ignore this preliminary finding particularly in light of the large quantity of this material in use and the likelihood of its being discarded. For further information the reader is referred to the Listing Background Document "Spent Halogenated and Non-Halogenated Solvents and the Still Bottoms/Sludges From the Recovery of these Solvents."
U102 and U107	Dimethyl phthalate (U102) and Di-n-octyl phthalate (U107).	While these compounds are not acutely toxic to man, they have been found to be teratogenic in rats, causing fetal resorbtion, gross abnormalities, and decreased fetal weight. Dimethlyl phthalate is mutagenic in microbial assay systems. In addition, a recent report (Water Quality Criteria Document: Phthalate Esters, NTIS PB No. 81-117780) indicated that neurotoxic effects have been observed in workers exposed to mixtures of phthalates.
U121	Fluorotrichloromethane	Fluorotrichloromethane has been listed because of the danger it poses to the earth's ozone layer and thus its removal from the list of toxic chemicals under § 307 of the Clean Water Act is not germane to the reason it was listed as a hazardous waste.
U140	Isobutyl Alcohol	The Health and Environmental Effects Profile cited in the May 19, 1980 Background Document (Appendix A of the Listing Background Document) discusses and supports the listing of this waste as toxic. More specificially, oral administration in rats of relatively high concentrations of this substance resulted in biochemical and histologic liver changes. Liver carcinomas and sarcomas as well as mycloid leukemia have also been produced in this species. Additionally, this compound should also have been listed as ignitable in § 261.33(f), since the May 19, 1980 listing of waste F005 clearly indicates that the compound is ignitable. The waste, in fact, possesses a flash point 28°C. Isobutyl alcohol also will be added to Appendix VII of Part 261, from which it was omitted inadvertently.
U184	Pentachloroethane	Contrary to claims of the commenter, a Health and Environmental Effects Profile for this compound was published (Appendix A of §§ 261.31 and 261.32 Listing Background Documents, pp. 435-453. According to this profile, release of pentachloroethane to the environment poses a potential hazard to aquatic ecosystems. For example, according to the recent Water Quality Criteria Document (U.S. EPA, Ambient Water Quality Criteria: Chlorinated Ethanes. EPA 440/5-80-029. October 1980.), the maximum concentration that can be present in surface waters without danger to the exosystem is 38-87 μg/l. Pentachloroethane also is bioaccumulative, a futher reason for its continued listing.
U188	Phenol	The Agency strongly disagrees with the comment that mismanagement of waste phenol does not pose a hazard to human health. While the carcinogenicity of phenol has not been firmly established, both liver and kidney damage to humans will result from chronic exposure to phenol with death a potential consequence. In addition, the acute toxicity of phenol results in central nervous system depression with symptoms severe enough to earn phenol a toxicity rating of 'High' in Sax (*Dangerous Properties of Industrial Materials*, Fifth Edition, 1979, Van Nostrand Reinhold Co., New York). This standard reference indicates that "death or permanent injury may occur due to exposure at normal use . . .". Therefore, the Agency will continue to include phenol under § 261.33(f).
U194	n-Propylamine	While the commenter believes that compounds, such as this one, having an oral (rat) LD50 of 570 mg/kg are not toxic, the Agency disagrees. Other standard sources support the Agency's viewpoint. For example, "Clinical Toxicology of Commercial Products", (3rd ed.) considers compounds which have an oral LD50 (as determined using rats) in the range of 500 mg/kg to 5000 mg/kg to be toxic to moderately toxic; however, it should be noted that this compound is at the higher end of the range and would tend to be considered toxic rather than moderately toxic.
U207	Tetrachlorobenzene	The Health and Environmental Effects Profile cited in the May 19th Backgound Document discusses and supports the listing of all waste commercial chlorinated benzenes. Among the specific toxic effects of tetrachlorobenzene are its aquatic toxicity (14.5 μg/l) and bioconcentration factor (1800X). Since the commenter did not present any specific evidence or reasons for the Agency not to list tetrachlorobenzene as a hazardous waste, it will remain listed under § 261.33(f).
U212	2,3,4,6-Tetrachlorophenol	As stated in the Health Effects Profile for this compound, 2,3,4,6-Tetrachlorophenol is fetotoxic in rats, and inhibits both carbohydrate metabolism and the liver oxidase system. It also is bioaccumulative (bioaccumulation factor 1100). EPA has established 1 μg/l as the ambient water quality criterion based on organoleptic effects; 440 μg/l was established for the protection of aquatic life.
U220	Toluene	While toluene has a relatively low acute toxicity (oral [rat] LD50 of 5000 mg/Kg), as described in the cited Health and Environmental Effects Profile, low level chronic exposure to toluene has caused chromosome damage in humans and has led to the development of neuro-muscular disorders. Toluene has also reported to cause reproductive problems to female workers during occupational exposure.
U223	Toluene diisocyanate	The Agency believes that toluene diisocyanate (TDI) should continue to be listed as a hazardous waste when discarded. TDI exposure produces respiratory sensitization, and decreased lung function. Exposure to high concentrations can result in pulmonary edema and death. Additionally, the reaction of free isocyanate groups with water usually occurs very rapidly, is exothermic, and results in a possibly explosive release

EPA hazardous waste No.	Compound name	Action taken
		of toxic and potentially carcinogenic aromatic chemicals. Damage incidents of this type actually have occurred in waste management practice (see listing Background Document on Toluene Diisocyanate Production).
U226	1,1,1-Trichloroethane	No data was presented by the commenter to justify the contention that waste 1,1,1-trichloroethane does not pose a health hazard and should not be listed. As the bioassays described in the May 19th Appendix A Health and Environment Effects Profile indicate increased tumor production was noted in animals treated with 1,1,1-trichloro<ethane. In addition, *in vitro* transformation of rat embryo cells and subsequent firbosarcoma production by these cells when injected *in vivo*, also indicates that 1,1,1-trichloroethane has carcinogenic potential. It should also be noted that the Agency recently determined that 1,1,1-Trichloroethane should continue to be listed as a toxic pollutant under § 307(a) of the Clean Water Act.
U232 and U233	2,4,5-Trichlorophenoxyacetic acid and 2,4,5-Trichlorophenoxypropionic acid.	One commenter questioned the presence of these constituents on the § 261.33 list when the waste constituents are among the parameters measured by the characteristic of Extraction Procedure Toxicity (EP). We believe the concern is largely academic since discarded commercial chemical products consisting of these pesticides will undoubtedly contain concentrations many orders of magnitude above the EP levels.

D. The Agency received several comments indicating that a mistake had been made in converting from one set of units to another during the computation of inhalation toxicity values. We acknowledge that for a number of the compounds listed for acute inhalation toxicity, the conversions were erroneous so that the values given in the May 18th Background Document were incorrect. After recalculating the toxicity values, it was found that the following compounds still meet the criteria for lising as an acutely hazardous waste [inhalation (rat) LC50≤2 mg/l/hr or inhalation (human) LCLo ≤ 2 mg/l]. The recalculated raw data and the correct values are presented below. The formulas used in converting inhalation toxicity values are:

$ppm = mg/m^3 \times (22.4/MW)$
$mg/l = (mg/m^3)/1000$
$mg/l = (MW)(ppm)/(22.4)(1000)$
$(mg/l/minute)/60 = mg/l/hour$
$(mg/l/hour[s]) \times (hour[s] = mg/l/hour$
MW = Molecular weight

EPA hazardous waste No.	Compound name	Molecular weight	Cited value (mg/l/hr	Correct value (mg/l/hr)	Published value [source of data]
P005	Allyl alcohol	58	6.8	0.06	TCLo(hum) 25ppm [N]
P016	Bis(chloromethyl) ether	115	0.49	0.25	LC50(rat) 7ppm/7 hr [S]
P017	Bromoacetone	137	0.95	0.53	TCLo(hum) 3.2mg/l/10mn [D]
P028	alpha-Chlorotoluene	127	0.003	1.70	LC50(rat) 150ppm/2hr [S]
P031	Cyanogen	52	0.16	0.81	LC50(rat) 350ppm/hr [S]
P033	Cyanogen chloride	61	0.59	0.01	TCLo(hum) 10mg/m³ [S]
P056	Flourine	[illegible]	1.85	0.03	LC50(rat) 185ppm/hr [S]
P064	Isocyanic acid, methyl ester	41	0.20	0.004	TCLo(hum) 2ppm [N]
P066	Methomyl	162	0.77	0.56	LC50(rat) 77ppm [N]
P068	Methyl hydrazine	[illegible]	2.96	0.61	LC50(rat) 74ppm/4hr [S]
P073	Nickel carbonyl	171	0.73	0.12	LC50(rat) 240mg/m³/30mn [S]
P096	Phosphine	[illegible]	0.44	0.07	LC50(rat) 11ppm/4hr [S]
P110	Tetraethyl lead	324	1.58	0.09	LC50(rat) 6ppm [S]
P118	Trichloromethanethiol	[illegible]	[illegible]	0.45	

[1] Listed in oral exposure column of Backgound Document instead of inhalation exposure column.

[N] = NIOSH Registry, [S] = Sax, [D] = DOT.

E. The Agency also received a number of inquiries regarding the specific nomenclature used in listing the generic chemical names, expressing confusion in certain cases because these compounds often go by a number of different names. In order to eliminate any confusion, the Agency has revised the listing descriptions in § 261.33 (e) and (f). The new lists contain only the International Union for Pure and Applied Chemistry (IUPAC) name and, where available, a cross-reference to the compound's commonly-used generic name. Since the IUPAC name is the one employed in *Chemical Abstracts*, the premier guide to the world's chemical literature, the Agency believes that the new listing descriptions will permit unambiguous compound identification.

In compiling the new regulation, we have listed each identified substance in alphabetical order but have retained the hazardous waste number used in the May 19th, interim final regulation. As a result, the § 261.33 (e) and (f) lists no longer numbered consecutively. Furthermore, where a generic name and the IUPAC name are cross-referenced, both will be listed under the same hazardous waste number, but will not appear consecutively in the regulation. We have chosen this method of organization because we believe additional (and unnecessary) confusion would result if new hazardous waste numbers were assigned to each waste, and because the existing numbers

already have been used for notification purposes.[2]

F. Asbestos.

The Asbestos Information Association submitted extensive comments arguing that the interim final listing of discarded asbestos (as hazardous waste U013) was procedurally defective for want of prior notice, and substantively unjustified because disposal is already regulated under the National Emission Standard for Asbestos (NESHAP) program (40 CFR Part 61).

We disagree that the interim final promulgation of the asbestos listing was procedurally defective. In our view, the opportunity to comment prior to any regulatory effect of § 261.33 cures any possible procedural deficiencies. The situation here thus is distinguishable from those in such cases as *U.S. Steel Corp.* v. *EPA*, 595 F.2d 207 (5th Cir., 1979), and *State of New Jersey* v. *EPA*, —— F.2d —— (D.C. Cir., 1980), where interim final regulations became effective prior to opportunity for comment.

We are, however, more impressed with the commenter's substantive argument. Certainly, duplicative regulation should be avoided where possible. We therefore are temporarily deferring final promulgation of the listing of asbestos while we investigate further the relationship of the NESHAP and the RCRA management standards, and the extent to which NESHAP facilities afford comparable environmental protection in managing waste asbestos. One possible approach would be to grant NESHAP facilities a RCRA permit by rule, and apply substantive RCRA standards to discarded asbestos up until the point of disposal. (See § 265.1(c) (1) and (2) and § 122.26 (a) and (b) where the Agency has adopted a comparable approach for hazardous wastes also subject to regulation under the Marine Protection, Research, and Sanctuaries Act, and the Underground Injection Control program approved or promulgated under the Safe Drinking Water Act). Another approach would be integration of the Toxic Substances Control Act asbestos-in-the-schools program, the NESHAP program, and RCRA standards into a single regulatory program. The NESHAP program will serve as a safeguard against pollution problems resulting from asbestos disposal pending final determination of this issue.

[2] The Agency has not, however, used IUPAC names in Appendix VIII of Part 261, in large part because no questions have been raised about the identity of the Appendix VIII compounds. The Agency will consider using IUPAC names in Appendix VIII if the regulated community believes that such a change is warranted.

II. Trade Names Included in the List and Scope of Coverage of the Regulation

A. The May 19th regulation applied to all discarded commercial chemical products, manufacturing chemical intermediates, off-specification species, and container and spill residues thereof "having the generic name listed in paragraphs (e) or (f) . . . ." [3] (§ 261.33(a), (b), (d).) The regulation thus clearly included more materials than those listed specifically in § 261.33(e) and (f). A footnote to both § 261.33(e) and (f) likewise indicated that the scope of coverage of these provisions was broader than materials listed by name: "The Agency included those trade names of which it was aware; an omission of a trade name does not imply that the omitted material is not hazardous. The material is hazardous if it is listed under its generic name."

Included in this list of generically-named materials were several hundred trade name products (for example, RAT AND MICE BAIT, RO–DETH, and SPOR–KIL). As the above-cited footnote indicates, these trade names are illustrative, and not the exclusive list of hazardous discarded trade name products. However, the form of the list confused a number of commenters, who questioned why other similarly-constituted products were not named. Other commenters complained that the lists in (e) and (f) operated in a commercially discriminatory manner because their products were included by name, while other comparable products were included only by reference.

In order to eliminate this confusion, the Agency has decided to remove all trade names from the list of generic names in § 261.33(e) and (f). Since no trade names now will appear in the regulation, the footnote to these provisions also will be deleted. As before, all trade name products having a listed generic name are included within the scope of the regulation.

B. Questions also have been raised as to the precise meaning of the regulatory language "having the generic name listed in paragraphs (e) or (f)." The Agency intends that this language include the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. This scope of coverage was expressed in the May 19th regulation where hundreds of such products were listed by name in § 261.33(e) and (f).[4] We also believe that this reading conforms to usual understanding. Commercial chemicals are almost never sold in pure form. Generally, a chemical need not be present at full strength for a product to have its intended effect, and so is diluted to the desired concentration. For practical purposes, however, the product is considered to be the chemical comprising its active portion. For example, persons purchasing the fungicide pentachlorophenol (U–242) do not normally receive a pure chemical, but rather a formulation (e.g., Permatox DP–2) in which the fungicide pentachlorophenol is the active ingredient. There is no doubt, however, that this trade product formulation is identified with the active chemical constituent. Another more homely example is the functional identity of aspirin and acetylsalicylic acid even though an aspirin is not pure active acetylsalicylic acid [5]

This understanding likewise is reflected in the principal journals cataloguing chemical substances. The NIOSH Registry (National Institute of Occupational Safety and Health, *Registry of Toxic Effects of Chemical Substances* (1978 ed.)), for instance, lists generic chemical names along with the synonymous commercial product trade name, explaining that "commercial product trade names are included . . . when they represent a single active chemical entity . . . ." (*id.* at xvii.) *The Farm Chemicals Handbook* (Meister Publishing Co., 1979 ed.), probably the basic reference source for information on the agricultural chemicals industry, likewise lists all trade products having a generically-named chemical as the sole active ingredient as "other names" for that chemical. Similarly, manufacturers of trade name products, in complying with reporting obligations under the Toxic Substances Control Act, voluntarily and routinely report trade names as synonyms for the pure generically-named chemical even though the trade product does not consist of the chemical in its pure form. See, e.g., Toxic Substances Control Act Chemical Substance Inventory, Volume II, p. 111 (Arasan, Arasan 70, Arasan 75, Arasan-M, Arasan 425, Arasan-SF, and Arasan 70–S Red listed as synonyms for thiuram); p. 113 (Arsodent listed as synonym for arsenic trioxide).

Public comment on the interim final regulation likewise reflected an

[3] Containers and liners are included insofar as they held a material "having the generic name listed in paragraph (e)." § 261.33(c).

[4] We are, however, adding appropriate clarifying language to the comment to § 261.33.

[5] Needless to say, neither aspirin nor acetylsalicylic acid are hazardous wastes when discarded.

understanding that discarded products containing a generically-named chemical as the sole (or in some cases even the principal) active ingredient were included by the regulation. The Dow Chemical Company, for instance, commented that the "same generic material" generally is sold under many different trademarks, listing as an example 38 chemical names, trade name products, and synonyms for 1,1,1-trichloroethane, widely-used as a solvent. Almost all of these trade names are not the pure chemical, but rather contain the chemical as the (or an) active ingredient.[6] USS Agri-Chemicals, another commenter, also indicated that trade products need not be identical in chemical composition to the generically-named chemical to be thought of as that chemical.

The approach outlined above—that products containing a generically listed chemical as the sole active ingredient are included within the scope of the regulation—has a number of significant advantages. First, the approach seems to reflect normal commercial understanding. Further, a potential unintended loophole for diluted formulations of generically-listed chemicals is eliminated. In addition, the regulation would have little practical effect, and would be at odds with usual understanding, if it were read as applying only to pure chemicals, since 100% pure chemicals are used only rarely in commercial practice.

There should be little question that single active ingredient products containing a generically-listed chemical as its active ingredient will usually and frequently be toxic and thus hazardous waste when discarded. The toxicity data contained in the May 19th Background Document indicates that most of the chemicals need be present in only low concentrations for the product to have toxic effects. We further believe that products which are identified with the generically-listed chemical because the chemical is the sole active ingredient will normally contain concentrations of the chemical far higher than necessary to produce toxic effects or will be present in combination with so-called inert ingredients which tend to magnify its toxic effects (*e.g.*, solvents and surfactants). The products mentioned as synonyms for 1,1,1 trichloroethane in Dow's comments, for example, contain over 90% of the generically-listed chemical. We also note that many of the trade products regulated under this section are pesticides or fungicides, produced for the express purpose of destroying plant or animal life. It is evident that such a substance, when discarded, meets the RCRA definition of hazardous waste.

We recognize that this regulation is deficient in its failure to address products containing mixtures of chemicals listed in § 261.33 as their ingredients. Because these products are normally not thought of as having a 1:1 relationship to a listed compound, we do not think that we can address the problems by means of final or interim final Agency action. We do intend, however, in the near future to propose an amendment to § 261.33 to cover active ingredient mixtures.

We also recognize that some persons legitimately may not have realized the intended scope of coverage of § 261.33 and thus may have not notified the Agency that they generate these materials, nor, in the case of treaters, storers or disposers, filed a permit application as required by sections 3010 and 3005(e) of RCRA. Since this failure is, at least in part, due to an ambiguity in EPA's regulations, we do not believe it fair to penalize persons who thus far have failed to comply. Consequently, persons handling products covered by §261.33 which consist of a listed chemical as the sole active ingredient, and who have not yet notified the Agency, must do so by February 23, 1981.[7] Facilities managing these wastes still may qualify for interim status if they submit a Part A permit application (or an amended Part A application, in the case of facilities which already have applied to manage other identified or listed hazardous wastes) by May 25, 1981.

C. A number of comments indicated that trade name products listed specifically in the May 19th interim final regulation do not contain a generically-named chemical as the sole active ingredient, or (in some cases) do not refer to any specific product formulation but rather to a family of products. Since § 261.33 as promulgated and finalized applies only to sole active ingredient formulations, these products are not presently hazardous wastes when discarded. Trade name products in this category are D–CON (formerly listed as waste P001), PERMATOX (formerly listed as waste P090) and SANTOPHEN (formerly listed as waste P090). The Agency notes, however, that a number of products marketed under these general trademarks are in fact products which consist of a compound listed in § 261.33(e) or (f) as its sole active ingredient, and where this is the case, that trade name product is a hazardous waste when discarded. Examples are PERMATOX DP–2 (technical grade pentachlorophenol), and SANTOPHEN–20 (sole active ingredient pentachlorophenol).

Comments also reflected confusion about two of the other trade name products listed in the May 19th regulation. Even though trade names are now being removed from the text of the regulation, we believe it is important to clarify our intent. One commenter indicated that it handles a product called 'METAFOS 164', a trademark for the surfactant sodium hexametaphosphate. The commenter believed this product was included under the May 19th listing of 'METAFOS', a trade product listed in both the NIOSH Registry and the *Farm Chemicals Handbook* as a synonym for methyl parathion (P071). In fact, the similiarity of product names appears coincidental. The Agency, as stated, intends to regulate only trade products containing a listed chemical (in this case methyl parathion) as the sole active ingredient, so that the product METAFOS 164 would not be a hazardous waste when discarded.

A second, similar situation arose with respect to another listed product, 'THIONEX'. THIONEX is a trade product name for the pesticide endosulfan (waste P050) (*Farm Chemicals Handbook*), and so is a hazardous waste when discarded. According to a commenter, however, an identically-named but chemically very different product also exists. Obviously, only the product consisting of the pesticide endosulfan is a hazardous waste when discarded. Confusion caused by name similarity should be addressed by determining the identity of a product's active ingredient.

III. The Problem of Identifying Which Discarded Trade Name Products Are Hazardous

The Agency is aware that many persons handling commercial products have found it difficult to determine whether these materials are hazardous wastes when discarded because the product's chemical composition is not always readily obtainable. Manufacturers in many cases have been reluctant or have refused to divulge this information, in part because of concern

[6] Dow also commented that discarded products containing chemicals measured by the characteristic of EP toxicity should not be listed in § 261.33, again reflecting an understanding that products containing a § 261.33 (e) or (f) chemical as an active ingredient are covered by the regulation, since the comment would have little point if a pure chemical was involved (*viz.* a material containing 100% 2,4,5-T would always fail the test for the characteristic of EP toxicity).

[7] Under Section 3010 of RCRA, persons who already have notified that they handle any identified or listed hazardous waste are not required to notify again.

for revealing proprietary data. In the face of these difficulties, some commenters went so far as to suggest that generators not be responsible for complying with the regulations unless they have actual knowledge of the product's chemical composition.

The Agency is taking a number of steps to deal with this problem. First, we are now preparing a directory of chemical products [8] which are hazardous wastes when discarded. The Directory will include generic names, other names by which the chemicals are known (e.g., myrbane oil for nitrobenzene) and the names of trade products which are regulated under § 261.33 as well as the applicable hazardous waste number. The Directory will be advisory, not part of the regulation itself, so that a defendant in an enforcement proceeding will still be able to show that a waste listed in the Directory is not a waste listed in § 261.33. By the same token, absence of a product name from the Directory is not a defense. The Agency will expand the Directory over time to try and provide as complete a list as possible.

A second form of Agency guidance is the recently-implemented RCRA Industry Assistance Hotline. Persons unsure whether the trade name product they are discarding is a hazardous waste may call this toll-free number and provide the name of the product. The Agency will then provide advice as to whether the product is a hazardous waste and its basis for the determination. As with the Directory, the Agency's response will be advisory, not a formal regulatory action. The hotline telephone number is 800–424–9346 (in Washington, D.C., 554–1404).

We also expect that persons unsure of the hazardousness of a given product will call the manufacturer of the product. Although manufacturers may not want to give out the formula for their products, the Agency believes it is reasonable to expect suppliers to inform customers if disposal of the product is regulated under either § 261.33(e) or § 261.33(f). Customers of course have the option of refusing to deal further with a supplier who will not divulge this information.

We disagree strongly with the suggestion that generators lacking actual knowledge of a product's chemical composition remain unregulated. Such a standard provides a strong incentive for generators not to determine whether discarded products are hazardous wastes. One purpose of RCRA is to require closer attention and inquiry into the potentially hazardous nature of discarded materials, and generators of discarded trade products are no exception. Suggestions for further means of dealing with the question of identity are, however, solicited.

[8] SW–884, "Directory of Trade Name Products and Synonyms" will be available from Mr. Ed Cox, Solid Waste Information, U.S. Environmental Protection Agency, 26 West St. Clair St., Cincinnati, Ohio 45268 (telephone number 513–684–5362).

IV. Interpretative Issues

As noted above, most interpretative questions involving § 261.33 will not be resolved until publication of a forthcoming RIM. Certain questions, however, can be dealt with in this preamble.

A. Are solid wastes that contain one or more of the chemicals listed in § 261.33 hazardous wastes by virtue of containing these materials?

Solid wastes which simply contain one of the chemicals listed in § 261.33 are not thereby hazardous. Where EPA intends to list such wastes, it will do so by listing them in §§ 261.31 and 261.32. This intention is in fact clearly expressed in the comment to § 261.33(d) which is part of the promulgated regulation. The purpose of § 261.33 is to regulate only the listed chemical products and intermediates and their trade name equivalents (and certain off-specification variants, emptied containers [9] and spill residues and debris thereof) as hazardous wastes when they are discarded or intended to be discarded.

However, when a solid waste is mixed with one of these discarded materials, the resulting mixture is a hazardous waste until delisted (with certain exceptions set forth in § 261.5(h)). See § 261.3(a)(2)(ii). As set out in § 261.3(b)(2), the solid waste becomes a hazardous waste when the mixing of the § 261.33 chemical takes place either as an act of discarding that chemical or the time the chemical is intended for later discard (*i.e.*, at the time the § 261.33 substance becomes a hazardous waste).

There are many situations where a solid waste becomes a hazardous waste by virtue of the actual or intended discarding of materials listed in § 261.33. Some of these situations are:

1. Where excess, expired or otherwise unwanted commercial chemical products or manufacturing chemical intermediates are discarded by discharging them into a wastewater stream or are discarded by being mixed into other solid wastes.

2. Where off-specification materials that, if they met specification, would be commercial chemical products or manufacturing chemical intermediates, are discarded by being discharged into a wastewater stream or discarded by being mixed into other solid wastes.

Where contaminated residues or debris from the clean-up of spills of listed chemicals are discarded by being mixed into other solid wastes.

[9] Regulation of containers which formerly held § 261.33 chemicals is addressed elsewhere in this Part X of the Federal Register.

B. Are the commercial products and manufacturing chemical intermediates listed in § 261.33 subject to regulation if they are used, reused, recycled or reclaimed in lieu of being discarded?

No. A commercial chemical product or manufacturing chemical intermediate listed in § 261.33 is a hazardous waste only if discarded or intended to be discarded. If it continues to be used or sold, it is not being discarded and therefore is not a hazardous waste. If it is an off-specification material and is reprocessed, recycled or reclaimed it is not being discarded and therefore is not a hazardous waste. Thus the provisions of § 261.6(b) are not intended to apply to reuses of § 261.33 materials, since in such cases the materials are never discarded. The reference in § 261.6(b) to wastes "listed in subpart D" is confusing. Wastes listed in §§ 261.31 and 261.32 are the only wastes intended to be included.

There are numerous situations where the above interpretations apply. Some of these are:

1. Where a customer receives an off-specification product listed in § 261.33 and returns it to the manufacturer for reprocessing, the product is not being discarded and is not a hazardous waste.

2. Where a commercial product becomes excess inventory or outlives its expiration date in a wholesale or retail outlet or in the hands of a user and the supplier takes the product back for resale or reprocessing, the product is not being discarded by the wholesaler, retailer or user and is not a hazardous waste.

3. Where there is breakage of containers holding § 261.33 chemicals and the supplier takes back the affected chemicals, including recovered spilled chemicals, for repackaging or reprocessing, the chemicals are not being discarded and are not hazardous wastes. If, however, some of the spilled chemicals are discarded or intended to be discarded because they cannot be returned (*e.g.*, they are mixed with dirt or other materials), these spilled chemicals (and associated spill cleanup residues and debris) are hazardous wastes.

These are examples of common practice which EPA believes should be encouraged because they avoid discarding valuable materials and

thereby conserve resources, while at the same time avoiding the potential hazards associated with discarding of hazardous chemicals. The above practices also avoid causing many thousands of wholesalers, retailers and users from becoming generators of hazardous wastes because they will be able to return the materials for reuse instead of possibly discarding them. The Agency believes that many of these persons will be unfamiliar or not well acquainted with the regulations and may fail to properly perform the responsibilities of a generator if they have to discard the materials.

It is quite likely that, in some cases, a manufacturer or supplier will find it necessary to discard some portion of the materials returned to him because he is unable to reprocess, repackage, resell or use it. Where this occurs, that portion which is discarded becomes a hazardous waste when it is discarded or when a decision is made to discard the material. In this situation the manufacturer or supplier is the generator of a hazardous waste because he is the "person . . . whose act . . . produces hazardous waste . . ." (see the definintion of "generator" in § 260.10).

C. Are manufactured articles (such as battery and mercury vapor lights) that contain any of the chemicals listed in § 261.33 hazardous wastes by definition if they are discarded or intended to be discarded?

EPA intends that the materials listed in § 261.33 include only those commerical chemical products and manufacturing chemical intermediates that are known by the generic name of the chemicals listed in paragraphs (e) and (f) of that section. Manufactured articles that contain any of the chemicals listed in paragraphs (e) and (f) are rarely, if even, known by the generic name of the chemical(s) they contain and, therefore, are not covered by the § 261.33 listings. Should the Agency find it necessary to list any manufactured articles as hazardous wastes, it will initiate rulemaking to add these articles to § 261.33.

Date: November 20, 1980.

Douglas M. Costle,

Administrator.

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Title 40, Part 261 of the Code of Federal Regulations is amended as follows:

1. Revise § 261.33 to read as follows:

§ 261.33 Discarded commercial chemical products, off-specification species, containers, and spill residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded:

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this section.

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraphs (e) or (f) of this section.

(c) Any container or inner liner removed from a container that has been used to hold any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) of this section, unless:

(1) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate; or

(2) The container or inner liner has been cleansed by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(3) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

(d) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this Section. [Comment: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in . . ." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in paragraphs (e) or (f). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in paragraphs (e) or (f), such waste will be listed in either §§ 261.31 or 261.32 or will be identified as a hazardous waste by the characteristics set forth in Subpart C of this Part.]

(e) The commercial chemical products or manufacturing chemical intermediates, referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to the small quantity exclusion defined in § 261.5(e). [Comment: For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.] These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous waste No.	Substance
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P066	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester
P001	3-(alpha-acetonylbenzyl)-4-hydroxycoumarin and salts
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-aAminopyridine
P009	Ammonium picrate (R)
P119	Ammonium vanadate
P010	Arsenic acid
P012	Arsenic (III) oxide
P011	Arsenic (V) oxide
P011	Arsenic pentoxide
P012	Arsenic trioxide
P038	Arsine, diethyl-
P054	Aziridine
P013	Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-
P028	Benzene, (chloromethyl)-
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-
P014	Benzenethiol
P028	Benzyl chloride
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
P021	Calcium cyanide
P123	Camphene, octachloro-
P103	Carbamimidoselenoic acid
P022	Carbon bisulfide
P022	Carbon disulfide
P095	Carbonyl chloride
P033	Chlorine cyanide
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P029	Copper cyanides
P030	Cyanides (soluble cyanide salts), not elsewhere specified
P031	Cyanogen
P033	Cyanogen chloride
P036	Dichlorophenylarsine
P037	Dieldrin
P038	Diethylarsine
P039	O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate
P041	Diethyl-p-nitrophenyl phosphate
P040	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	Diisopropyl fluorophosphate
P044	Dimethoate
P045	3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl] oxime
P071	O,O-Dimethyl O-p-nitrophenyl phosphorothioate

Hazardous waste No.	Substance
P082	Dimethylnitrosamine
P046	alpha, alpha-Dimethylphenethylamine
P047	4,6-Dinitro-o-cresol and salts
P034	4,6-Dinitro-o-cyclohexylphenol
P048	2,4-Dinitrophenol
P020	Dinoseb
P085	Diphosphoramide, octamethyl-
P039	Disulfoton
P049	2,4-Dithiobiuret
P109	Dithiopyrophosphonic acid, tetraethyl ester
P050	Endosulfan
P088	Endothall
P051	Endrin
P042	Epinephrine
P046	Ethanamine, 1,1-dimethyl-2-phenyl-
P084	Ethenamine, N-methyl-N-nitroso-
P101	Ethyl cyanide
P054	Ethylenimine
P097	Famphur
P056	Fluorine
P057	Fluoroacetamide
P058	Fluoroacetic acid, sodium salt
P065	Fulminic acid, mercury(II) salt (R,T)
P059	Heptachlor
P051	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene
P037	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-demethanonaphthalene
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo-dimethanonaphthalene
P004	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,exo-dimethanonaphthalene
P060	Hexachlorohexahydro-exo,exo-dimethanonaphthalene
P062	Hexaethyl tetraphosphate
P116	Hydrazinecarbothioamide
P068	Hydrazine, methyl-
P063	Hydrocyanic acid
P063	Hydrogen cyanide
P096	Hydrogen phosphide
P064	Isocyanic acid, methyl ester
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	Mercury, (acetato-O)phenyl-
P065	Mercury fulminate (R,T)
P016	Methane, oxybis(chloro-
P112	Methane, tetranitro- (R)
P118	Methanethiol, trichloro-
P059	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	Methomyl
P067	2-Methylaziridine
P068	Methyl hydrazine
P064	Methyl isocyanate
P069	2-Methyllactonitrile
P071	Methyl parathion
P072	alpha-Naphthylthiourea
P073	Nickel carbonyl
P074	Nickel cyanide
P074	Nickel(II) cyanide
P073	Nickel tetracarbonyl
P075	Nicotine and salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	Nitrogen dioxide
P076	Nitrogen(II) oxide
P078	Nitrogen(IV) oxide
P081	Nitroglycerine (R)
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P050	5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite
P085	Octamethylpyrophosphoramide
P087	Osmium oxide
P087	Osmium tetroxide
P088	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	Parathion
P034	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	Phenol, 2,4-dinitro-
P047	Phenol, 2,4-dinitro-6-methyl-
P020	Phenol, 2,4-dinitro-6-(1-methylpropyl)-
P009	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P036	Phenyl dichloroarsine
P092	Phenylmercuric acetate
P093	N-Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine
P041	Phosphoric acid, diethyl p-nitrophenyl ester
P044	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl]ester
P043	Phosphorofluoric acid, bis(1-methylethyl)-ester
P094	Phosphorothioic acid, O,O-diethyl S-(ethylthio)methyl ester
P089	Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester
P040	Phosphorothioic acid, O,O-diethyl O- pyrazinyl ester
P097	Phosphorothioic acid, O,O-dimethyl O-[p-((dimethylamino)-sulfonyl)phenyl]ester
P110	Plumbane, tetraethyl-
P098	Potassium cyanide
P099	Potassium silver cyanide
P070	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	Propanenitrile
P027	Propanenitrile, 3-chloro-
P069	Propanenitrile, 2-hydroxy-2-methyl-
P081	1,2,3-Propanetriol, trinitrate- (R)
P017	2-Propanone, 1-bromo-
P102	Propargyl alcohol
P003	2-Propenal
P005	2-Propen-1-ol
P067	1,2-Propylenimine
P102	2-Propyn-1-ol
P008	4-Pyridinamine
P075	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts
P111	Pyrophosphoric acid, tetraethyl ester
P103	Selenourea
P104	Silver cyanide
P105	Sodium azide
P106	Sodium cyanide
P107	Strontium sulfide
P108	Strychnidin-10-one, and salts
P018	Strychnidin-10-one, 2,3-dimethoxy-
P108	Strychnine and salts
P115	Sulfuric acid, thallium(I) salt
P109	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (R)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(III) oxide
P114	Thallium(I) selenite
P115	Thallium(I) sulfate
P045	Thiofanox
P049	Thioimidodicarbonic diamide
P014	Thiophenol
P116	Thiosemicarbazide
P026	Thiourea, (2-chlorophenyl)-
P072	Thiourea, 1-naphthalenyl-
P093	Thiourea, phenyl-
P123	Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	Vanadium pentoxide
P120	Vanadium(V) oxide
P001	Warfarin
P121	Zinc cyanide
P122	Zinc phosphide (R,T)

(f) The commercial chemical products or manufacturing chemical intermediates, referred to in paragraphs (a), (b), and (d) of this section, are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in § 261.5(a) and (f). [Comment: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.] These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous Waste No.	Substance
U001	Acetaldehyde (I)
U034	Acetaldehyde, trichloro-
U187	Acetamide, N-(4-ethoxyphenyl)-
U005	Acetamide, N-9H-fluoren-2-yl-
U112	Acetic acid, ethyl ester (I)
U144	Acetic acid, lead salt
U214	Acetic acid, thallium(I) salt
U002	Acetone (I)
U003	Acetonitrile (I,T)
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride (C,R,T)
U007	Acrylamide
U008	Acrylic acid (I)
U009	Acrylonitrile
U150	Alanine, 3-[p-bis(2-chloroethyl)amino]-phenyl-, L-
U011	Amitrole
U012	Aniline (I,T)
U014	Auramine
U015	Azaserine
U010	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[((aminocarbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-,
U157	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	Benz[c]acridine
U016	3,4-Benzacridine
U017	Benzal chloride
U018	Benz[a]anthracene
U018	1,2-Benzanthracene
U094	1,2-Benzanthracene, 7,12-dimethyl-
U012	Benzenamine (I,T)
U014	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-
U049	Benzenamine, 4-chloro-2-methyl-
U093	Benzenamine, N,N'-dimethyl-4-phenylazo-
U158	Benzenamine, 4,4'-methylenebis(2-chloro-
U222	Benzenamine, 2-methyl-, hydrochloride
U181	Benzenamine, 2-methyl-5-nitro
U019	Benzene (I,T)
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy, ethyl ester
U030	Benzene, 1-bromo-4-phenoxy-
U037	Benzene, chloro-
U190	1,2-Benzenedicarboxylic acid anhydride
U028	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester
U069	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	1,2-Benzenedicarboxylic acid, diethyl ester
U102	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070	Benzene, 1,2-dichloro-
U071	Benzene, 1,3-dichloro-
U072	Benzene, 1,4-dichloro-
U017	Benzene, (dichloromethyl)-
U223	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	Benzene, dimethyl-(I,T)
U201	1,3-Benzenediol
U127	Benzene, hexachloro-
U056	Benzene, hexahydro- (I)
U188	Benzene, hydroxy-
U220	Benzene, methyl-
U105	Benzene, 1-methyl-1-2,4-dinitro-
U106	Benzene, 1-methyl-2,6-dinitro-
U203	Benzene, 1,2-methylenedioxy-4-allyl-
U141	Benzene, 1,2-methylenedioxy-4-propenyl-
U090	Benzene, 1,2-methylenedioxy-4-propyl-
U055	Benzene, (1-methylethyl)- (I)
U169	Benzene, nitro- (I,T)
U183	Benzene, pentachloro-
U185	Benzene, pentachloro-nitro-
U020	Benzenesulfonic acid chloride (C,R)
U020	Benzenesulfonyl chloride (C,R)
U207	Benzene, 1,2,4,5-tetrachloro-
U023	Benzene, (trichloromethyl)-(C,R,T)
0234	Benzene, 1,3,5-trinitro- (R,T)
U021	Benzidine
U202	1,2-Benzisothiazolin-3-one, 1,1-dioxide
U120	Benzo[j,k]fluorene
U022	Benzo[a]pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzphenanthrene
U085	2,2'-Bioxirane (I,T)
U021	(1,1'-Biphenyl)-4,4'-diamine
U073	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-
U091	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-

Hazardous Waste No.	Substance
U095	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
U024	Bis(2-chloroethoxy) methane
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethylthiocarbamoyl) disulfide
U028	Bis(2-ethylhexyl) phthalate
U246	Bromine cyanide
U225	Bromoform
U030	4-Bromophenyl phenyl ether
U128	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	1-Butanamine, N-butyl-N-nitroso-
U035	Butanoic acid, 4-[Bis(2-chloroethyl)amino] benzene-
U031	1-Butanol (I)
U159	2-Butanone (I,T)
U160	2-Butanone peroxide (R,T)
U053	2-Butenal
U074	2-Butene, 1,4-dichloro- (I,T)
U031	n-Butyl alchohol (I)
U136	Cacodylic acid
U032	Calcium chromate
U238	Carbamic acid, ethyl ester
U178	Carbamic acid, methylnitroso-, ethyl ester
U176	Carbamide, N-ethyl-N-nitroso-
U177	Carbamide, N-methyl-N-nitroso-
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimethyl-
U215	Carbonic acid, dithallium(I) salt
U156	Carbonochloridic acid, methyl ester (I,T)
U033	Carbon oxyfluoride (R,T)
U211	Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane, technical
U026	Chlornaphazine
U037	Chlorobenzene
U245	1-(p-Chlorobenzoyl)-5-methoxy-2-methylindole-3-acetic acid
U039	4-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropane
U042	2-Chloroethyl vinyl ether
U044	Chloroform
U046	Chloromethyl methyl ether
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U049	4-Chloro-o-toluidine, hydrochloride
U032	Chromic acid, calcium salt
U050	Chrysene
U051	Creosote
U052	Cresols
U052	Cresylic acid
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide
U197	1,4-Cyclohexadienedione
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	Cyclophosphamide
U240	2,44-D, salts and esters
U059	Daunomycin
U060	DDD
U061	DDT
U142	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
U062	Diallate
U133	Diamine (R,T)
U221	Diaminotoluene
U063	Dibenz[a,h]anthracene
U063	1,2:5,6-Dibenzanthracene
U064	1,2:7,8-Dibenzopyrene
U064	Dibenz[a,i]pyrene
U066	1,2-Dibromo-3-chloropropane
U069	Dibutyl phthalate
U062	S-(2,3-Dichloroallyl) diisopropylthiocarbamate
U070	o-Dichlorobenzene
U071	m-Dichlorobenzene
U072	p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene (I,T)
U075	Dichlorodifluoromethane
U192	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) [illegible]
U060	Dichloro diphenyl dichloroethane
U061	Dichloro diphenyl trichloroethane
U078	1,1-Dichloroethylene
U079	1,2-Dichloroethylene
U025	Dichloroethyl ether
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U240	2,4-Dichlorophenoxyacetic acid, salts and [illegible]

Hazardous Waste No.	Substance
U083	1,2-Dichloropropane
U084	1,3-Dichloropropene
U085	1,2:3,4-Diepoxybutane (I,T)
U108	1,4-Diethylene dioxide
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl-dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U148	1,2-Dihydro-3,6-pyradizinedione
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine (I)
U093	Dimethylaminoazobenzene
U094	7,12-Dimethylbenz[a]anthracene
U095	3,3'-Dimethylbenzidine
U096	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-N-propylnitrosamine
U001	Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U067	Ethane, 1,2-dibromo-
U076	Ethane, 1,1-dichloro-
U077	Ethane, 1,2-dichloro-
U114	1,2-Ethanediylbiscarbamodithioic acid
U131	Ethane, 1,1,1,2,2,2-hexachloro-
U024	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U003	Ethanenitrile (I, T)
U117	Ethane,1,1'-oxybis- (I)
U025	Ethane, 1,1'-oxybis[2-chloro-
U184	Ethane, pentachloro-
U208	Ethane, 1,1,1,2-tetrachloro-
U209	Ethane, 1,1,2,2-tetrachloro-
U218	Ethanethioamide
U227	Ethane, 1,1,2-trichloro-
U043	Ethene, chloro-
U042	Ethene, 2-chloroethoxy-
U078	Ethene, 1,1-dichloro-
U079	Ethene, trans-1,2-dichloro-
U210	Ethene, 1,1,2,2-tetrachloro-
U173	Ethanol, 2,2'-(nitrosoimino)bis-
U004	Ethanone, 1-phenyl-
U006	Ethanoyl chloride (C,R,T)
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethan)
U038	Ethyl 4,4'-dichlorobenzilate
U114	Ethylenebis(dithiocarbamic acid)
U067	Etylene dibromide
U077	Ethylene dichloride
U115	Ethlene oxide (I,T)
U116	Ethylene thiourea
U117	Ethyl ether (I)
U076	Ethylidene dichloride
U118	Ethylmethacrylate
U119	Ethyl methanesulfonate
U139	Ferric dextran
U120	Fluoranthene
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	2-Furancarboxaldehyde (I)
U147	2,5-Furandione
U213	Furan, tetrahydro- (I)
U125	Furfural (I)
U124	Furfuran (I)
U206	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
U126	Glycidylaldehyde
U163	Guanidine, N-nitroso-N-methyl-N'nitro-
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	Hexachlorocyclohexane (gamma isomer)
U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene
U133	Hydrazine (R,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-
U099	Hydrazine, 1,2-dimethyl-

Hazardous Waste No.	Substance
U109	Hydrazine, 1,2-diphenyl-
U134	Hydrofluoric acid (C,T)
U134	Hydrogen fluoride (C,T)
U135	Hydrogen sulfide
U096	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U136	Hydroxydimethylarsine oxide
U116	2-Imidazolidinethione
U137	Indeno[1,2,3-cd]pyrene
U245	Indomethacin
U139	Iron dextran
U140	Isobutyl alcohol (I,T)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	Lindane
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile (I,T)
U092	Methanamine, N-methyl- (I)
U029	Methane, bromo-
U045	Methane, chloro- (I,T)
U046	Methane, chloromethoxy
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	Methane, tetrachloro-
U121	Methane, trichlorofluoro-
U153	Methanethiol (I,T)
U225	Methane, tribromo-
U044	Methane, trichloro-
U121	Methane, trichlorofluoro-
U123	Methanoic acid (C,T)
U036	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
U154	Methanol (I)
U155	Methapyriene
U154	Methyl alcohol (I)
U029	Methyl bromide
U186	1-Methylbutadiene (I)
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)
U226	Methylchloroform
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)
U068	Methylene bromide
U080	Methylene chloride
U122	Methylene oxide
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
U165	Naphthalene
U047	Naphthalene, 2-chloro-
U166	1,4-Naphthalenedione
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'diyl)]-bis (azo)bis[5-amino-4-hydroxy)-,tetrasodium [illegible]
U166	1,4,Naphthaquinone
U167	1-Naphthylamine
U168	2-Naphthylamine
U167	alpha-Naphthylamine
U168	beta-Naphthylamine
U026	2-Naphthylamine, N,N'-bis(2-chloroethyl)-
U169	Nitrobenzene (I,T)
U170	p-Nitrophenol
U171	2-Nitropropane (I)
U172	N-Nitrosodi-n-butylamine
U173	[illegible]
U174	N-Nitrosodiethylamine
U111	N-Nitroso-N-propylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane

Hazardous Waste No.	Substance
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide
U058	2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloro- ethyl)amino]tetrahydro-, oxide 2-
U115	Oxirane (I,T)
U041	Oxirane, 2-(chloromethyl)-
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
U242	Pentachlorophenol
U186	1,3 Pentadiene (I)
U187	Phenacetin
U188	Phenol
U048	Phenol, 2-chloro-
U039	Phenol, 4-chloro-3-methyl-
U081	Phenol, 2,4-dichloro-
U082	Phenol, 2,6-dichloro-
U101	Phenol, 2,4-dimethyl-
U170	Phenol, 4-nitro-
U242	Phenol, pentachloro-
U212	Phenol, 2,3,4,6-tetrachloro-
U230	Phenol, 2,4,5-trichloro-
U231	Phenol, 2,4,6-trichloro-
U137	1,10-(1,2-phenylene)pyrene
U145	Phosphoric acid, Lead salt
U087	Phosphorodithioic acid, 0,0-diethyl-, S-methylester
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U194	1-Propanamine (I,T)
U110	1-Propanamine, N-propyl- (I)
U066	Propane, 1,2-dibromo-3-chloro-
U149	Propanedinitrile
U171	Propane, 2-nitro- (I)
U027	Propane, 2,2'oxybis[2-chloro-
U193	1,3-Propane sultone
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U126	1-Propanol, 2,3-epoxy-
U140	1-Propanol, 2-methyl- (I,T)
U002	2-Propanone (I)
U007	2-Propenamide
U084	Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	2-Propenenitrile
U152	2-Propenenitrile, 2-methyl- (I,T)
U008	2-Propenoic acid (I)
U113	2-Propenoic acid, ethyl ester (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U162	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U233	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	n-Propylamine (I,T)
U083	Propylene dichloride
U196	Pyridine
U155	Pyridine, 2-[(2-(dimethylamino)-2-thenylamino]-
U179	Pyridine, hexahydro-N-nitroso-
U191	Pyridine, 2-methyl-
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	Pyrrole, tetrahydro-N-nitroso-
U200	Reserpine
U201	Resorcinol
U202	Saccharin and salts
U203	Safrole
U204	Selenious acid
U204	Selenium dioxide
U205	Selenium disulfide (R,T)
U015	L-Serine, diazoacetate (ester)
U233	Silvex
U089	4,4'-Stilbenediol, alpha,alpha'-diethyl-
U206	Streptozotocin
U135	Sulfur hydride
U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
U232	2,4,5-T
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
U212	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U153	Thiomethanol (I,T)
U219	Thiourea
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U222	O-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane
U228	Trichloroethene
U228	Trichloroethylene
U121	Trichloromonofluoromethane
U230	2,4,5-Trichlorophenol
U231	2,4,6-Trichlorophenol
U232	2,4,5-Trichlorophenoxyacetic acid
U234	sym-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,5-trimethyl-
U235	Tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil, 5[bis(2-chloromethyl)amino]-
U237	Uracil mustard
U043	Vinyl chloride
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester,

Appendix VIII [Amended]

2. In Appendix VIII of Part 261, delete the following compounds:

-Ethylenediamine

-N-Nitrosodiphenylamine

-.Oleyl alcohol condensed with 2 moles ethylene oxide

-1,2 Propanediol

Appendix VIII [Amended]

3. In Appendix VIII of Part 261, add the following constituent alphabetically:

-Iso butyl alcohol

These regulations are issued under the authority of Sections 1006, 2002(a) and 3001 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 USC 6905, 6912(a) and 6921.

[FR Doc. 80-36865 Filed 11-21-80; 2:51 pm]

BILLING CODE 6560-26-M

40 CFR Part 261

[SWH-FRL 1680-5]

Hazardous Waste Management System; Identification and Listing of Hazardous Waste

AGENCY: U.S. Environmental Protection Agency.

ACTION: Grant of temporary exclusions and request for comment.

SUMMARY: The Environmental Protection Agency (EPA) is today temporarily excluding solid wastes generated at several particular generating facilities from hazardous waste status. These temporary exclusions respond to delisting petitions submitted under 40 CFR 260.20 and 260.22 and are granted pursuant to 40 CFR 260.22(m). The effect of this action is to temporarily exclude certain wastes generated at these facilities from listing as hazardous wastes under 40 CFR 261, and from the management standards issued by EPA under Sections 3002 through 3006 of RCRA (40 CFR Parts 262 through 265 and 122 through 124 of this Chapter).

DATES: Effective date: November 19, 1980.

EPA will accept public comments on these temporary exclusions until January 26, 1981. Any person may request a hearing on these temporary exclusions by filing a request with John P. Lehman, whose address appears below, by December 17, 1980. The request must contain the information prescribed in § 260.20(d) of this chapter.

ADDRESSES: Comments should be sent to the Docket Clerk, Office of Solid Waste (WH-562), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

Requests for hearing should be addressed to John P. Lehman, Director, Hazardous and Industrial Waste Division, Office of Solid Waste (WH-565), U.S. Environmental Protection Agency, Washington, D.C. 20460. Communications should identify the regulatory docket number "Section 3001/Delisting Petitions."

The public docket for these temporary exclusions is located in Room 2711, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460 and is available for viewing from 9 a.m. to 4 p.m., Monday through Friday, excluding holidays.

FOR FURTHER INFORMATION CONTACT: Myles Morse, Office of Solid Waste (WH-565), U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C., (202) 755-9187.

SUPPLEMENTARY INFORMATION: On July 16, 1980 and November 12, 1980 as part of its final and interim final regulations implementing Section 3001 of RCRA, EPA published lists of hazardous wastes from non-specific and from specific sources. See 40 CFR §§ 261.31 and 261.32 (45 FR 47832-47836 and 74890-74892). These wastes were listed as hazardous because they typically and frequently exhibit either any of the characteristics of hazardous wastes identified in Subpart C of Part 261 (ignitability, corrosivity, reactivity and EP toxicity) or meet the criteria for listing contained in §§ 261.11(a)(2) or 261.11(a)(3).

The Agency, however, recognizes that individual waste streams may vary depending on raw materials, industrial processes and other factors. Thus, while a type of waste described in these regulations generally is hazardous, a specific waste meeting the listing description from an individual facility may not be hazardous. For this reason,

§§ 260.20 and 260.22 provide a delisting procedure, allowing persons to demonstrate that a specific waste from a particular generating facility should not be listed. To be delisted, petitioners must show that the waste produced at their facilities does not meet any of the criteria under which the waste was listed, and, in the case of an acutely hazardous waste, that it also does not meet the criterion of § 261.11(a)(3). (See § 260.22(a).) Wastes which are delisted may, however, still be hazardous if they exhibit any of the characteristics of a hazardous waste and generators remain obligated to make this determination.

In addition to wastes listed as hazardous in §§ 261.31 and 261.32, waste mixtures containing a listed hazardous waste and residues from the treatment, storage, or disposal of listed hazardous wastes also are eligible for delisting (and in fact remain hazardous wastes until delisted). (See §§ 261.3(a)(2)(ii), (c), and (d)(2).) Again, the substantive standard for delisting is that the waste not meet any of the criteria for which the waste was listed originally. Where the waste is a mixture of solid waste and one or more listed hazardous wastes, or is derived from one or more listed hazardous wastes, the demonstration may be made with respect to each constituent listed waste, or the waste mixture as a whole. (See § 260.22(b).) Like other delisted wastes, delisted mixtures and delisted hazardous waste treatment, storage or disposal residues remain subject to subpart C of Part 261, and so may be hazardous if they exhibit any of the characteristics of hazardous waste.

EPA recognizes as well that there will be circumstances where immediate action on delisting petitions is appropriate. Therefore, upon Agency review of a submitted petition, the Administrator may under § 260.22(m) grant a temporary exclusion if there is substantial likelihood that an exclusion will finally be granted.

The Agency to date has received 30 delisting petitions. Based on EPA's review of these petitions, seven temporary exclusions have been granted as indicated by today's publication. To allow the Agency to concentrate its efforts on petitions relating to waste listings becoming effective on November 19, 1980, the Agency has deferred action on five petitions which involve the interim final waste listings of July 16, 1980 (which become effective on January 16, 1981). An additional eight petitions have been mooted by amendments of the May 19, interim final hazardous waste listings (see 45 FR 74036 (October 30, 1980) and 45 FR 74884 (November 12, 1980)). Five other petitioners have been notified that the data supplied is insufficient and that additional information would be necessary in order to process their petitions. The remaining petitions were submitted too recently for the Agency to complete its evaluation by November 19, 1980. Additional temporary exclusions may be granted when our evaluation is completed.

It should be noted that the Agency has not run spot checks on the test data submitted to date in delisting petitions. The Agency believes that the sworn affidavits submitted with each petition sufficiently bind the petitioners to ensure presentation of truthful and accurate test results. The Agency may, however, spot sample and analyze wastes and/or groundwater before a final decision is made whether to exclude any particular waste from the hazardous waste regulations.

We also note that the temporary exclusions granted today apply only to the Federal hazardous waste management system established under the RCRA. States remain free to take any action they deem appropriate with regard to these wastes.

The temporary exclusions published today involve the following petitioners: The Stablex Corporation, Radnor, Pennsylvania, for its proposed waste treatment/stabilization facility in Groveland Township, Oakland County, Michigan; the Firestone Wire and Cable Company, Danville, Kentucky; the Fosbrink Machine Company, Connellsville, Pennsylvania; the General Electric Company/Lighting Business Group, Conneaut, Ohio; John Deere Des Moines Works, Des Moines, Iowa; Johnson Steel and Wire Company, Inc., Worcester, Massachusetts; and Dresser Industries, Inc./Tool Group, Johnson City, Tennessee. The Agency has determined as a result of analysis of treatment processes, waste constituent and leachate test data, and specific product formulation lists, that these petitioners may receive final exclusions for their wastes and therefore, that the granting of temporary exclusions is appropriate. The final decision, to exclude the wastes described above, will be made after the Agency receives additional testing and operational data (as specified in this publication) and reviews the comments submitted in response to this notice.

Discussion of Specific Temporary Exclusions

I. Stablex Corporation

A. *Petition for Delisting.* The Stablex Corporation (Stablex) plans to operate several hazardous waste treatment facilities, utilizing industrial waste treatment processes and stabilization techniques which are designed to produce a solid cementitious landfill material. Stablex presently is applying for the necessary state and federal permits to construct and operate a hazardous waste treatment facility in the State of Michigan. In anticipation of treatment of industrial wastes, Stablex has petitioned the Agency (as required by § 261.3(d)(2)) to delist the treatment residue produced by the Stablex treatment process for the following hazardous wastes:

Inorganic Pigments

K002 Wastewater treatment sludge from the production of chrome yellow and orange pigments.

K003 Wastewater treatment sludge from the production of molybdate orange pigments.

K004 Wastewater treatment sludge from the production of zinc yellow pigments.

K005 Wastewater treatment sludge from the production of chrome green pigments.

K006 Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).

K007 Wastewater treatment sludge from the production of iron blue pigments.

K008 Oven residues from the production of chrome oxide green pigments.

Petroleum Refining

K050 Heat exchanger bundle cleaning sludge from the petroleum refining industry.

K052 Tank bottoms (leaded) from the petroleum refining industry.

Leather Tanning and Finishing

K053[1] Chrome (blue) trimmings generated by the following subcategories of the leather tanning and finishing industry: hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue: and shearing.

K054[1] Chrome (blue) shavings generated by the following subcategories of the leather tanning and finishing industry; hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearing.

K055[1] Buffing dust generated by the following subcategories of the leather tanning and finishing industry; hair pulp/chrome tan/ retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearing.

K056[1] Sewer screenings generated by the following subcategories of the leather tanning and finishing industry; hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet

[1] The Agency has deleted these wastes from the hazardous waste list in finalizing the May 19, 1980 interim final regulations (see 45 FR 72038 (October 30, 1980) and 45 FR 74844 (November 12, 1980)) so that the petition for delisting residues from treatment of these wastes is moot.

finish; no beamhouse; through-the-blue; and shearing.

K057[1] Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry; hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearing.

K058[1] Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry; hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; and through-the-blue.

K059[1] Wastewater treatment sludges generated by the following subcategory of the leather tanning and finishing industry; hair save/non-chrome tan/retan/wet finish.

Metals Recovery

F013[1] Flotation tailings from selective flotation from mineral metals recovery operations.

F014 Cyanidation wastewater treatment tailing pond sediment from mineral metals recovery operations.

F015 Spent cyanide bath solutions from mineral metals recovery operations.

Scrubber Sludges

F016[1] Dewatered air pollution control scrubber sludges from coke ovens and blast furnaces.

Electroplating

F006[2] Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.

F007[2] Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions).

F008[2] Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges).

F009[2] Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions).

Metal Heat Treating

F010[2] Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching bath sludges).

F011[2] Spent cyanide solutions from salt bath pot cleaning from metal heat-treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning).

F012[2] Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges).

Organic Chemicals

K021 Aqueous spent antimony catalyst waste from fluoromethanes production.

Iron and Steel

K060 Ammonia still lime sludge from coking operations

Commercial Chemical Products

P010 Arsenic Acid.
P011 Arsenic pentoxide.
P012 Arsenic trioxide.
P013 Barium cyanide.
P029 Copper cyanide.
P030 Cyanides.
P032 Cyanogen bromide.
P055 Ferric cyanide.
P098 Potassium cyanide.
P099 Potassium silver cyanide.
P104 Silver cyanide.
P106 Sodium cyanide.
P107 Strontium sulfide
P120 Vanadium pentoxide.
P121 Zinc cyanide.
U013[3] Asbestos.

Stablex argues that the residue (called "stablex material") from treatment of these hazardous wastes should be delisted because many of the hazardous constituents of each waste stream are present only in an immobilized, non-hazardous form, or are destroyed during the treatment process, leaving only negligible concentrations in the final stabilized material. Stablex therefore claims that its stabilized treatment sludge no longer meets the criteria for listing contained in 40 CFR §§ 261.11(a)(2) and 261.11(a)(3).

B. *Support for delisting.* Stablex claims that in operating its facilities it uses a prescreening program which accepts only wastes that can be fixed successfully by the Stablex process—predominately metal and cyanide-containing wastes. The Stablex process combines various hazardous waste treatment processes (including metal hydroxide precipitation, acid/alkaline neutralization, cyanide destruction via hypochlorite oxidation, and hexavalent chromium reduction and precipitation) with a waste fixation/stabilization process. The stabilization process is a mixed batching system which combines the treated waste sludges with cement and fly ash. The stablex material is pumped (as a sludge) to specified landfill sites. This fill material begins to set in 24 hours. The resulting stabilized product, the petitioner claims, is characterized by the formation of silicate lattices with "polymer-like" bonds, creating a cementitious material having compressive strength similar to an industrial grout (200–800 psi).

Stablex has been treating hazardous industrial wastes which are very similar in composition to the prospective U.S. wastes at its several existing English and Japanese facilities. These wastes includes sludge from the production of paint pigments, still lime sludge from coking operatings, sludge from metals recovery operations, quenching sludge from metal heat treating operations, and assorted sludges from electroplating operations. Automotive industry wastes also have been treated frequently.

In order to characterize the claimed non-hazardous nature of the stablex product, Stablex has submitted leachate tests on U.S., Japanese and English stabilized wastes. Total constituent analyses of the stablex material and groundwater and surface water run-off monitoring data (from active overseas operations) also were submitted. Waste streams from a typical range of processes in the U.S. automotive industry were tested, including plating operations (principle constituents nickel, chromium and copper); paint priming (principle constituent zinc phosphate); and waste treatment sludges from painting and metal preparation processes. Specific parameters measured in each EP toxicity test included arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, copper, iron, manganese, zinc, nickel, aluminum and cyanide.

EP toxicity tests were performed on stablex material which was ground to a fine powder to maximize the surface area available to the leaching action of the acidic solutions of these tests. EP toxicity tests performed on stabilized prospective U.S. wastes produced the following leachate results:

Leachate Concentration

Constituent	Parts per million
Arsenic	.02
Barium	1.4
Cadmium	0.01
Chromium	0.27
Cyanide	0.6
Lead	0.05
Mercury	0.004
Selenium	0.003
Silver	0.01

Note.—Total constituent analysis of the stablex material revealed cyanide concentrations of 1 ppm.

In addition, groundwater and surface water run-off monitoring data were submitted from the Stablex facility in

[2] These descriptions reflect the finalized listing description in 40 CFR 261.31 and 261.32 (45 FR 74890–74892 (November 12, 1980).)

[3] The Agency will delete asbestos from the hazardous waste list in finalizing the May 19, 1980 interim final regulations so that the petition for delisting residues from treatment of this waste is moot.

Thurrock, England which indicate that the concentration of the constituents of concern in groundwater were below the levels established by the U.S. interim primary drinking water standards. Maximum cyanide levels in groundwater were reported as 0.11 ppm. The Agency notes, however, that the low levels of hazardous constituents reported in groundwater are not necessarily satisfactory indicators of the long term fixation characteristics of a stabilized material (since particular landfill design features may impede groundwater contamination). Indeed, since the Thurrock facility has been operational only since 1978, high levels of contaminants in the groundwater would not be expected at this time unless particularly poor disposal practices were employed.

In addition to submitting analytic data, Stablex also offers a number of short-term safeguards to prevent environmental insult while the Agency reviews additional data before making a final decision on whether to grant a final delisting. Stablex has agreed with the Michigan Department of Natural Resources and the EPA to manage the stablex material as if it were a hazardous waste for the initial two year period of facility operation. During this period, the stablex material will be deposited within a demonstration cell containing a double underdrain/double compacted clay bottom liner and a PVC sidewall liner. The lower liner will consist of 4 feet of compacted clay, (with a permeability factor of 10^{-7}) while the upper liner will consist of 1 foot of compacted clay. A minimum separation of 12 feet between the bottom liner and the groundwater level will be maintained. During rain and winter conditions the stablex material will be placed in enclosed cylindrical molds within the lined demonstration cell to assure proper curing. Leachate monitoring systems will be constructed beneath the stablex material and the bottom liner of the demonstration cell and will incorporate sampling sumps for leachate withdrawal. In addition, monitoring wells will be placed along the perimeter of the placement area. A monitoring program involving analysis of leachate and storm run-off will be established during the demonstration period to determine the stability of the stablex product and the migratory potential of the leachate from the site.

C. *Agency analysis and action.* The Agency's function under RCRA includes the establishment of a national program to improve solid waste management and promotion of environmentally sound hazardous waste treatment and disposal practices. Historically-tested stabilization processes could assume an important role in properly managing hazardous wastes, particularly in view of the scarcity of hazardous waste disposal sites.

The Agency has reviewed the monitoring data submitted by the Stablex Corporation from its facility in Thurrock, England. Groundwater samples extracted from the Thurrock, England placement site revealed all EP toxic constituents to be at levels below the U.S. interim primary drinking water standards. The maximum reported cyanide concentration of 0.11 ppm in groundwater is one half that of the U.S. Public Health Service's suggested drinking water standard. However, the absence of high levels of these constituents in the groundwater below a very new landfill does not in itself indicate long-term inertness of the landfill material.

The Agency also has reviewed the leachate tests submitted from the facilities in England and Japan and domestic laboratories. Analysis of the EP toxic constituents in these waste extracts revealed concentrations well below the EP maximum toxicity levels for each waste stream tested. In addition, cyanides were present in the stablex material only in concentrations below 1 ppm, apparently indicating the effectiveness of the cyanide-destruction process.

Therefore, based predominately on the test data submitted on prospective U.S. wastes, the Agency is granting the Stablex Corporation's facility in Groveland Township, Oakland County, Michigan, a temporary exclusion for the stablex material produced using the treatment techniques described in its petition, from the following wastes listed in Subpart D of the hazardous waste regulations:

Inorganic Pigments

K002 Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003 Wastewater treatment sludge from the production of molybdate orange pigments.
K004 Wastewater treatment sludge from the production of zinc yellow pigments.
K005 Wastewater treatment sludge from the production of chrome green pigments.
K006 Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007 Wastewater treatment sludge from the production of iron blue pigments.
K008 Oven residues from the production of chrome oxide green pigments.

Electroplating

F006 Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and miling of aluminum.
F007 Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions).
F008 Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges).
F009 Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions).

Metal Heat Treating

F010 Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching bath sludges).
F011 Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning).
F012 Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges).

Metals Recovery

F014 Cyanidation wastewater treatment tailing pond sediment from mineral metals recovery operations
F015 Spent cyanide bath solutions from mineral metals recovery operations

Commercial Chemical Products

P010 Arsenic acid.

P011 Arsenic pentoxide.
P012 Arsenic trioxide.
P013 Barium cyanide.
P029 Copper cyanide.
P030 Cyanides.
P032 Cyanogen bromide.
P055 Ferric cyanide.
P098 Potassium cyanide.
P099 Potassium silver cyanide.
P104 Silver cyanide.
P106 Sodium cyanide.
P121 Zinc cyanide.

We remained concerned, however, with the long-term leaching characteristics of the stablex material (and residue from other waste stablization processes). The Agency, as discussed further below, may find it necessary to have these long-term characteristics addressed before a final delisting is granted. Stablex' two year management pledge, however, is a safeguard during that period.

D. *Wastestreams for which Stablex submitted insufficient data.* The Agency has deferred action on the stablex material produced from the treatment of the following wastes due to submission of insufficient test data:

Organic Chemicals

K021 Aqueous spent antimony catalyst waste from fluoromethanes production.

Iron and Steel

K060 Ammonia still lime sludge from coking operations.

Petroleum

K050 Heat exchanger bundle cleaning sludge from the petroleum refining industry.
K052 Tank bottoms (leaded) from the petroleum refining industry.

Commercial Chemical Products

P107 Strontium sulfide.
P120 Vanadium pentoxide.

Stablex has been notified of these deficiencies and is presently testing for the additional characterization of the total naphthalene, phenolics, carbon tetrachloride, chloroform, antimony, strontium sulfide, and vanadium pentoxide concentrations in the stablex material. If this data indicates that these constituents are either destroyed or immobilized as part of the treatment process, the Agency expects to grant a temporary exclusion for these waste streams as well. Data has also been requested characterizing the effects of organics present in petroleum refining wastes on the leaching characteristics of the metal constituents and on the overall stability of the stablex material.

E. *Agency information needs for final delisting.* The Stablex Corporation has been notified of a number of information needs before a final delisting can be granted. This information includes all test data previously mentioned in section D of this publication, as well as four repetitions of the EP Toxicity test for metals and cyanide, on each prospective U.S. waste on both cured and uncured stablex material; submission of a complete set of borehole monitoring data throughout placement areas in England and Japan, and a detailed description of the process and of the safety and monitoring features incorporated into each pretreatment operation. In addition, data addressing the long-term leaching characteristics of the stablex material should be presented. The Agency also may condition any final exclusion upon performance of certain operating standards such as continuous groundwater monitoring.

II. Firestone Wire and Cable Company

A. *Petition for delisting.* The Firestone Wire and Cable Company (Firestone), involved in the manufacture of high strength wires and strands, has petitioned the Agency to delist its wastewater treatment sludge, presently listed as EPA Hazardous Waste No. F006 (Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acide anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminùm.[4] Cadmium, chromium, nickel, and cyanide are the hazardous constituents of this waste. Firestone has petitioned to delist its waste because it does not meet the criteria for which Hazardous Waste F006 was listed in Part 261, Subpart D. Firestone utilizes the processes of wire drawing, heat treating, acid and alkali cleaning, electroplating, electrochemical displacement deposition and twisting, in its production of steel wire and strands. Firestone indicates that since its electroplating process uses brass (copper and zinc) and bronze (copper and tin), its waste cannot contain hazardous levels of cadmium and chromium. Firestone further states that the cyanide destruction process eliminates all but negligble levels of cyanide in the sludge.

Firestone's brass and bronze cleaning and plating operations use hydrochloric and sulfuric acids, sodium hydroxide, copper and zinc cyanide, and copper and tin sulfate. These chemicals are rinsed from the wire after each process step. The rinse waters are piped directly to the effluent pretreatment plant. The pretreatment plant operation of acid neutralization utilizes alkali addition for pH adjustment, while the cyanide destruction process involves oxidation by chlorination. The sludge cake produced by flocculation, clarification, and filtration consists primarily of the hydroxides of iron, copper, zinc and tin.

B. *Support for delisting.* The Firestone Wire and Cable Company has submitted a detailed description of its sludge pretreatment system, results of influent sludge composition analyses, EP toxicity test results, distilled water leachate tests for cyanides, and total consituent analyses of sludge samples for chromium, cadmium, nickel and cyanide. Samples were obtained over a three month period to represent the uniformity of constituent concentrations in the waste.

The total constituent analyses revealed concentrations of cyanides in finished sludge of <2 ppm, while leachate tests produced cyanide leachate concentrations of <0.08 ppm. EP toxicity tests involving cadmium, chromium and nickel produced leachate levels of <0.1, <0.1, and <1 ppm respectively.

C. *Agency analysis and action.* The constituents of concern for Hazardous Waste No. F006 are cadmium, chromium, nickel and cyanide. Firestone does not use cadmium, chromium or nickel in its electroplating process. Cyanides however, are used and therefore may be present in the sludge. Firestone has, however, sufficiently demonstrated that its sludge pretreatment system removes the majority of cyanides from its waste, leaving residue concentrations of less than 2 ppm in the sludge. The cyanide leachate values of <0.08 ppm are well below the Public Health Service's recommended drinking water standard.

Total constituent levels of cadmium, chromium and nickel concentrations in the sludge of <1, 13, and 48 ppm respectively support the fact that the Firestone process does not use these metals in their plating operation. They apparently appear only as contaminants in other process solutions. Leachate concentrations of <0.1, <0.1, and 1 ppm for cadmium, chromium and nickel respectively, indicate that these elements also are present in essentially an immobile form.

Firestone therefore has presented sufficient data indicating the non-hazardous levels of cadmium, chromium, nickel, and cyanide in their waste. The Agency also acknowledges that the cyanide pretreatment operation is effective and employs satisfactory

[4] This listing reflects the finalized listing 40 CFR Part 261, Subpart D, November 12, 1980.

safety features, including transfer pumps automatically triggered by alkali/chlorination sensors, and a standard sampling operating procedure prior to the transfer of wastes to the pH adjustment tank. The Agency therefore has granted a temporary exclusion to Firestone's Danville, Kentucky facility for their electroplating wastewater treatment sludge, as described in its petition, from its listing under EPA Hazardous Waste No. F006.

III. Fosbrink Machine Company Incorporated

A. *Petition for delisting.* The Fosbrink Machine Company (Fosbrink), involved in the manufacture of wire and wire products, has petitioned the Agency for the delisting of its sludge, formerly listed as EPA Hazardous Waste No. K063, sludge from lime treatment of spent pickle liquor from steel finishing operations.[5] Fosbrink has petitioned to delist their waste because it does not meet the criteria for listing.

The Fosbrink Machine Company utilizes the processes of cold drawing, pickling and lime treatment in the production of wire from wire rods. Its waste treatment process for spent pickle liquor rinse and overflow wastes involves neutralization, oxidation, flocculation, settling, drying and recycling of the liquid waste stream component. They claim their sludge is environmentally stable and non-hazardous, and specifically that its sludge does not contain hazardous levels of chromium and lead, the constituents of concern in the spent pickle liquor of hazardous waste K062.

Fosbrink has submitted a detailed description of their sludge treatment system, and EP toxicity test results for all toxic constituents specified in Section 261.24 of the regulations. The sludge samples were taken over a one month period to represent sufficiently the uniformity of constituent concentrations in the waste. EP toxicity tests involving chromium and lead produced leachate levels of <0.04 and <0.03 ppm, respectively.

B. *Agency analysis and action.* The constituents of concern in this waste, are chromium and lead. EP extracts from sludge samples analyzed by Fosbrink show lead and chromium consistently below the national interim primary drinking water standards. These low leachate levels indicate that the constituents are present in essentially an immobile form. The Agency therefore, has granted temporary exclusion to the Fosbrink's facility in Connellsville, Pennsylvania for its treated pickling rinse and overflow wastes, as described in its petition.

IV. General Electric Company

A. *Petition for delisting.* The General Electric Company/Lighting Business Group's, Conneaut Base Plant (General Electric), involved in the production of light bulbs, has petitioned the Agency to delist its wastewater treatment sludge, presently listed as EPA Hazardous Waste No. F006, (Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.)[6] General Electric has petitioned to delist their waste because it does not meet the criteria for which Hazardous Waste F006 was listed in Part 261, Subpart D of the regulations.

The General Electric Company uses a "bright-dip" etching and stamping process for its light bulb bases which is characterized as an electroplating operation under Hazardous Waste F006. General Electric claims that the chemical etch or "bright-dip" process employed this facility does not use any of the hazardous constituents for which Waste No. F006 are listed. Instead, an aluminum and brass (copper and zinc) chemical etching process utilizing nitric and sulfuric acids is used. The stamping process generates a light diluting cutting oil as a waste stream. General Electric further states that its wastewater treatment process combines the streams for these two operations, and as a result, cracks the oils from the stamping process (due to the action of the etching acid wastes). The addition of sodium hydroxide, it is claimed, neutralizes these acids, rendering the waste non-hazardous.

General Electric has submitted a detailed description of the etching and stamping processes utilized at this facility to indicate that the listed hazardous waste constituents of Hazardous Waste No. F006 are not used in its operation. General Electric has also submitted constituent analyses and leachate tests of their sludge for chromium, cadmium, nickel and cyanide. Total constituent analyses revealed concentrations of <10, <22, <8 and $<.005$ ppm for chromium, cadmium, nickle and cyanide, respectively. EP toxicity tests produced leachate concentrations of <0.01, <0.02, and 0.08 ppm for chromium, cadmium, and nickel respectively. The levels of cadmium, chromium and nickel which appeared in these wastes are attributed to unknown sources, since they are not used intentionally in the process.

B. *Agency analysis and action.* The hazardous waste constituents for which EPA Hazardous Waste No. F006 is listed are cadmium, chromium, nickel and cyanide. General Electric has submitted sufficient evidence that the wastewater treatment sludge produced in its chemical etching process does not contain hazardous levels of these constituents. Concentrations of cadmium, chromium and nickel in EP extracts of the sludge were consistently below the national interim primary drinking water standards. The low leachate levels indicate that the constituents of concern are present in an immobile form. Cyanide concentrations of <0.005 ppm in the sludge are considered negligible. The low concentrations of these constituents are probably a result of unknown minor sources of contamination and background levels, rather than direct use of these constituents in the process. The Agency therefore, has granted a temporary exclusion to the General Electric Company, Conneaut Base Plant, for the wastes generated by its "bright-dip" chemical etching and stamping process as described in its petition, listed under EPA Hazardous Waste No. F006.

V. Dresser Industries, Incorporated

A. *Petition for delisting.* Dresser Industries, Inc. (Dresser), involved in the manufacture of hand tools, has petitioned the Agency to delist its sludge, formerly listed as EPA Hazardous Waste No. K063 (sludge from lime treatment of spent pickle liquor from steel finishing operations).[7] Dresser has petitioned to delist their waste because it does not meet the criteria for listing.

Dresser utilizes the processes of sulfuric acid pickling, phosphate coating

[5] On November 12, 1980 (45 FR 74884), EPA removed waste K063 from the hazardous waste list (§ 261.32). However, since these lime treatment sludges are generated from the treatment of a listed hazardous waste (K062), they still are considered to be a hazardous waste (§ 261.3(c)(2)). Further, they remain hazardous wastes until they no longer meet any of the characteristics of hazardous wastes and are delisted (§ 261.3(d)(2)).

[6] This listing reflects the finalized listing 40 CFR Part 261, Subpart D, November 12, 1980.

[7] On November 12, 1980 (45 FR 74884), EPA removed waste K063 from the hazardous waste list (§ 261.32). However, since these lime treatment sludges are generated from the treatment of a listed hazardous waste (K062), they still are considered to be a hazardous waste (§ 261.3(c)(2)). Further, they remain hazardous wastes until they no longer meet any of the characteristics of hazardous wastes and are delisted (§ 261.3(d)(2)).

and cold extrusion of medium carbon non-alloyed steel in the production of hand tools. Its waste treatment process for spent pickle liquor, pickling rinse and overflow wastes involves neutralization (using lime and sodium hydroxide), flocculation, settling, and filtration. Dresser claims that its sludge is environmentally stable and non-hazardous, and specifically that it does not contain hazardous levels of chromium and lead, the constituents of concern in the spent pickle liquor waste K062.

Dresser submitted a detailed description of their sludge treatment system, and EP toxicity test results for all toxic constituents specified in § 261.24 of the regulations. The samples were taken over a one month period to represent sufficiently the uniformity of constituent concentrations in the waste. EP toxicity tests performed on the waste produced chromium and lead leachate levels of <0.01 and <0.58 ppm, respectively.

B. *Agency analysis and action.* The constituents of concern is this waste are chromium and lead. EP extracts from sludge samples analyzed by Dresser show lead and chromium consistently well below the maximum EP toxicity levels. These low leachate levels indicate that the constituents are present in essentially an immobile form. The Agency, therefore, has granted temporary exclusion to Dresser's facility in Johnson City, Tennessee for its treated spent pickle liquor and pickling rinse waste sludge, as described in its petition.

VI. Johnson Steel & Wire Company, Inc.

A. *Petition for delisting.* The Johnson Steel and Wire Company (JS&W), involved in the manufacture of specialty ferrous wire, has petitioned the Agency to delist its sludge, formerly listed as EPA Hazardous Waste No. K063, (sludge from lime treatment of spent pickle liquor from steel finishing operations).[8] JS&W has petitioned to delist their waste because it does not meet the criteria for listing.

JS&W utilizes the processes of cold drawing, hydrochloric acid pickling, and replacement coating of tin, bronze and phosphate in the production of ferrous wire. Its waste treatment process for spent pickle liquor rinse and overflow wastes involves neutralization, lime and polymer flocculation, settling, and pressed filtration. They claim their sludge is environmentally stable and non-hazardous, and specifically that the sludge does not contain hazardous levels of chromium and lead, the constituents of concern in the spent pickle liquor of waste K062.

JS&W submitted a detailed decription of their sludge treatment system, and EP toxicity test results for all toxic constituents specified in § 261.24 of the regulations. The samples were taken over a one month period to represent sufficiently the uniformity of constituent concentrations in the waste. EP toxicity tests revealed chromium and lead levels in the waste extract of 0.07 and 0.04 ppm, respectively.

B. *Agency analysis and action.* The constituents of concern in this waste, are chromium and lead. EP extracts from sludge samples analyzed by JS&W show lead and chromium consistently well below the maximum EP toxicity levels. These low leachate levels indicate that the constituents are present in essentially an immobile form. The Agency therefore, has granted a temporary exclusion to the JS&W's facility in Worcester, Massachusetts for its treated spent pickle liquor, as described in its petition.

VII. John Deere Des Moines Works

A. *Petition for delisting.* John Deere Des Moines Works (John Deere), a company manufacturing farm equipment and machinery, has petitioned the Agency to delist its wastewater treatment sludge, presently listed as EPA Hazardous Waste No. F006 (Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum).[9] John Deere has petitioned to delist its sludge because it does not meet the criteria for which it was listed in Part 261, Subpart D, of the regulations.

John Deere utilizes the processes of metal cleaning, metal machining, electroplating of chromium and zinc, and metal heat treating in the production of farm machinery. It claims that its waste treatment process is successful in generating a non-hazardous sludge cake, with cadmium and chromium present at non-hazardous levels and in essentially an immobile form. In addition, John Deere states that nickel and cyanide are not used in its electroplating processes.

John Deere submitted a detailed description of its waste treatment system; EP toxicity test results for cadmium, chromium, and nickel; and total and amenable cyanide analyses of its sludge.

John Deere utilizes a lime/cationic polymer, pH regulated, precipitation waste treatment system. EP toxicity tests for cadmium, chromium and nickel performed on the resulting sludge cake produced maximum leachate concentrations of 0.08, .37, and 0.66 ppm, respectively. The total concentration of nickel and cyanide in sludge were reported at 10.6 and <0.13 ppm, respectively. The concentration of cyanide amenable to chlorination (free cyanide) was determined to be <0.007 ppm.

B. *Agency analysis and action.* The hazardous waste constituents for which Waste No. F006 is listed are cadmium, chromium, nickel and cyanide. Although John Deere does not use nickel and cyanide in its electroplating process, cadmium and chromium are used and are present in the sludge. These constituents appear, however, to be present in an immobile form.

EP toxicity test leachate results for cadmium and chromium are well below the EP maximum toxicity levels and indicate the immobile nature of these constituents. The low levels of nickel and cyanide in the sludge (10.6 and 0.13 ppm respectively) indicate that these constituents are not used in John Deere's electroplating process but are probably a result of known minor sources of contamination and background levels. The levels of cyanide found in the sludge are below the U.S. Public Health Service's suggested drinking water standard, and the low levels of free cyanide indicate that levels of mobile cyanide are even lower. The Agency therefore, has granted a temporary exclusion to the John Deere Des Moines Works, facility for its treated electroplating waste sludge, as described in its petition, listed under EPA Hazardous Waste No. F006.

Dated: November 13, 1980.

Eckardt C. Beck,

Assistant Administrator.

[FR Doc. 80-36684 Filed 11-24-80; 8:45 am]

BILLING CODE 6560-30-M

[8] On November 12, 1980 (45 FR 74884), EPA removed waste K063 from the hazardous waste list (§ 261.32). However, since these lime treatment sludges are generated from the treatment of a listed hazardous waste (K062), they still are considered to be a hazardous waste (§ 261.3(c)(2)). Further, they remain hazardous wastes until they no longer meet any of the characteristics of hazardous wastes and are delisted (§ 261.3(d)(2)).

[9] The listing reflects the finalized listing 40 CFR Part 261, Subpart D, November 12, 1980.